The Builder.

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SATURDAY, FEBRUARY 28, 1852.

SIR CHARLES BARRY thinks we did him injustice by the note appended to Mr. Jeakes's letter last week, though it simply repeated what Lord Seymour had stated was the cost of ventilating and warming the New Houses of Parliament. We have since then looked into the matter for ourselves, according to promise, and on the information we have obtained are able to say that the statement in question gives an erroneous view of the expenditure, and is calculated greatly to mislead. The estimates for warming and ventilating and smoke arrangements, as supplied to Parliament so long ago as August 1850, amount, it is true, to 208,000*l.*; but these include 85,000*l.* for extra works in fire-proofing. Of this about 161,000*l.* have been already spent, and, as we are told, should be divided thus:—Spent by Dr. Reid, according to Lord Seymour, on the House of Commons and apartments connected with it, 57,800*l.*; fire-proofing enforced by Dr. Reid's arrangements in the first instance, say 75,000*l.*; and the sum spent by the architect on the House of Peers, and all the other parts already warmed and ventilated with the exception of the House of Commons, 28,000*l.* The architect's estimates for the latter amount to about 43,000*l.* so that we must conclude that other works remain to be executed.

Putting things at the best, still there has been a vast expenditure of money unnecessarily. A grievous error was committed in the first instance by giving Dr. Reid control over the architect. To say that the architect is not to be the "chief workman" is a positive contradiction in terms: and we do most strenuously protest, as we have ever done, against the setting up of such an *imperium in imperio* as was attempted here, and which has produced such unsatisfactory and costly results.

Several correspondents have addressed us lamenting that injury will be done to the sanitary cause by the statements, if not the facts, connected with the ventilation here, but as they mostly advocate other systems of ventilation in which they are interested, we do not print their letters. One says that—

"In a large collegiate establishment accommodating 1,000 pupils besides professors, porters, &c.; and containing ten large lecture-rooms and a library as large as a church, where but moderate structural preparation had been made; 10,000 cubic feet of fresh air per minute are supplied at a temperature of 80 deg. by a steam engine, provided with means of regulation as to quantity and temperature, at an initial cost below 750*l.* including builders' work, and at a permanent expense for attendance and fuel, of about 100*l.* per annum: and that in a much larger college containing fifty-two large school-rooms, and an immense theatre for lectures, the structure offering facilities by which steam power was not required, the initial cost was below 1,400*l.* and the annual cost of fuel and management about 150*l.*"

Nor do we see any reason why the statement should not be perfectly true.

The means provided for the ventilation of the House of Commons, are most elaborate, and in some parts, we say advisedly, perfectly useless. We were in the House on the occasion of the declaration of the change of ministers (a change by the way which has put Lord Seymour out of the Office of Works, and Lord John Manners in), and it seemed to us that there was no control exercised over the atmosphere of the House. The supply of air was inadequate, and the results, as a matter of course, are innumerable draughts. It seemed to be *vacuum* ventilation, rather than *plenum*. This may be accounted for by the fact that the engine intended to drive the fan by which the air is to be supplied, is not at work, being found too noisy for the purpose. We must wait, therefore, before we come to a conclusive opinion as to the efficiency or otherwise of the present arrangements. The position in which air is brought in, at the feet of all the members, does not seem to us the best: indeed, our present impressions are against it. If warm, the air will be found disagreeable; when cold, and even tempered air in rapid motion produces the effect of cold, it will be dangerous.

It will startle some, by the way, to find that the cubical contents of the air-chambers, shafts, and flues used by Dr. Reid to ventilate, are actually larger than the contents of the House of Commons, lobbies, and corridors ventilated,—the first being 366,000 cubic feet, the second 386,000 feet. A section of the House and surrounding chambers above and below would show a very small kernel in a very thick rind. The "ventilated gas-lights" give an immense amount of heat, and, in hot weather, we are disposed to think, will be found unbearable. The mass of metal composing the chandeliers becomes a permanently heating surface, which radiates on all sides.

Returning to those parts of the building which have been warmed and ventilated under the architect's direction (by Mr. Jeakes), some of our readers will perhaps like to know the mode which has been adopted. In the first place, then, we find a set of steam-boilers, erected in a central position, which keep up the temperature of a series of heating surfaces placed at intervals beneath the entire area to be warmed. A supply of fresh air is taken from the Victoria Tower, and a current through the various channels is produced by an enormous fan, worked by steam power, and capable of propelling, they say, 300,000 cubic feet of air *per* minute through the building. The air thus brought in, is tempered in a large central air-chamber, filled with upright heated pipes, from which it passes to all parts through channels, receiving in its progress such additional temperature, from other heating surfaces, as may be required for that particular apartment, or portion of the building to which it is being conveyed. Each supply is under separate control, both in volume and temperature: arrangements are also made for cleansing the air of any impurities in its progress through the channels, and a cooling apparatus is to be introduced for reducing the temperature of the admitted air in summer.

In the House of Lords specially, in order to render the ventilation as perfect as possible, under all the changes to which it is subject, means are provided for admitting the pure air, and extracting the vitiated, both at the *upper* and *lower* part of the apartment, and a sufficient power is said to exist to change the entire atmosphere of the House in a few minutes, either by admitting and extracting the air at the upper or lower part, or at both. The object sought is to maintain a *plenum*, in order to prevent currents into the House from without, by making all openings outlets for air instead of inlets. Two 10-horse engines are employed. The answers to our inquiries in the libraries and other parts as to the results were satisfactory. The fan, of which we have spoken, is made of thin sheet-iron, and is 22 feet in diameter. Its effect is such when at work, making nearly 100 revolutions in a minute, that we expected when exposed to it to find our own disjointed members whisked against their will to join the members of the Upper House. The amount of heating surface provided by the boilers may be judged of when we say there are six miles of pipes proceeding from them. The smoking-room (whereof the walls are covered with coloured tiles to a certain height), is cleared by an exhausting shaft with a separate small furnace. A bell went while we were here, and we learnt that throughout the building there are bells to announce the approach of a "division," rung simultaneously by electricity:—a "junction" is effected just previous to a division.

Of matters æsthetic we will say but little just now. The stained-glass windows, in the House of Commons, by Messrs. Hardman, are not good; they are very far inferior to other works by the same firm. They are badly painted, the supporters especially (Mr. Hume's "Red Lions," and sea-horses), and contrast unfavourably even with windows of the same design in the central hall. A heraldic lion, or sea-horse is conventional, but need not be a caricature. Some of our readers will remember the story of the herald-painter, who was taken to the Zoological Gardens, previously to emblazoning some arms, to see the lion there. "Do you call that thing a lion," said he, contemptuously, when the king of beasts stood before him;—"*that* a lion? If I could'nt paint a better, I'd eat him."

Mr. Bell's statue of Lord Falkland, in St. Stephen's Hall, is an admirable work, full of noble feeling. It has worthy companions, in Clarendon, by Mr. Calder Marshall, now R.A.; and Hampden, by Mr. Foley.

In the Queen's Robing-room Mr. Dyce has completed one of the series of frescoes, which he is commissioned to execute there. According to an assistant in the room, the subject is "The Spirit of Chivalry," but this, we think, must be an error. It represents a male figure being taken up into the sky in his chair; other figures in the heavens are awaiting him. The clouds supporting the figure in the chair are more like a series of Brobdignagian potatoes or Jerusalem artichokes. An armed man on the left side of the picture would evidently fall, but for the point of his shield, which touches the ground, and the draped female figure in the man's arms on the right side is but a bundle of clothes without a body in it, or a *Marionette*. It pains us to be forced to speak thus of the work of so accomplished an artist as Mr. Dyce, but the matter is too important to be blinked: he has several others to execute, and it is necessary that he should hear the truth. The *motive* of the picture is as unsatisfactory as the execution: it would seem to have been cut out of a book of Romish miracles, and is wholly unsuited to the time and the place.

New Workhouse at Ormskirk.—At a special meeting of the board of guardians, the report for the building of a new workhouse, &c. has been unanimously adopted.

ON THE PRESENT CONDITION OF THE ROYAL TOMBS IN WESTMINSTER ABBEY, AROUND THE SHRINE OF EDWARD THE CONFESSOR.*

It is now about thirty-five years ago that I first went to Paris. Among the public buildings which I then visited, none interested me more than the Abbey Church of S. Denis, the crypts of which contain the ashes of most of the kings of France from Clovis downwards. Nothing could be more touching than the contemplation of the rifled tombs of such a line of powerful monarchs, arranged in decent order, but without any affected attempt at restoration, or incongruous endeavour to form an arbitrary system of perfect and uninterrupted classification.

In August last I again went to S. Denis with some friends, and there I saw that, without reference to periods, chronological arrangement, styles, or any of the proprieties of art, a vain and pedantic effort had been at work to complete the series of the dynasties of the Valois and Bourbons, by the introduction of modern recumbent figures, stone coffins, and other sepulchral receptacles, devoid of taste and feeling. I felt how ill the "religio loci" had been attended to, and I left with the melancholy conviction that all the charm of truthfulness which had once given veneration to these vaults, had irrevocably passed away. It was under impressions such as these that I shortly after accompanied a foreign friend to Westminster Abbey, anxious to show him the memorials of our olden times and of our greatness in past periods, and that we possessed treasures, which would form a favourable contrast to those of S. Denis.

Westminster Abbey is emphatically the public building in England which most attracts the regard of the foreigner, filling him with respect, and producing the most lasting impression upon his imagination. I must own that I felt ashamed, as I drew the attention of my friend to monument after monument of our sovereigns, princes, and nobles, and particularly to the shrine of the Confessor. I endeavoured to palliate the state of ruin in which these precious memorials of the history of our country, its arts, and its greatness, were allowed to remain. From want of timely care they are gradually falling into decay, and threatening, in some cases, absolute destruction. "What!" said my companion, "can it be true that your Government so disregards these speaking monuments of past achievements, that it will not rescue them from ut.er ruin? What! is the father, is the son of the Black Prince so disregarded by you, that you will not preserve, even as works of art, and ere it be too late, the marble that encases their remains, and the bronzes which hand down their lineaments? Have your Edwards and your Henrys bled for this? Have they for this perpetuated England's glory in the 13th, 14th, and 15th centuries, and you allow them to be forgotten? Have these queens been in vain distinguished for their public and domestic virtues; in vain renowned for their piety, and you permit their sacred deposits to be despoiled, degraded, trampled upon?"

I could not disregard these too just reproaches. The full consciousness at once came home to me, that this interesting series of monuments had been shamefully neglected; that we were too ignorant of their value. Impressed by a sentiment which I feel assured that all partake, I mean by an earnest attachment for the monarchical, yet free institutions of our country, and an attachment to the throne, rendered still more ardent by the political convulsions which we have witnessed, I determined to bring the subject under the notice of this Institute, trusting, that however feeble would be the voice which should be heard pleading the cause of England's past worth, and of the dust of her honoured line of kings, a response would be found in the sympathy of those who would hear me. This spreading far and wide might eventually, perhaps, reach those who have the power, if they only have the will, to rescue from entire annihilation these speaking mementoes of monarchs, who once ruled the destinies of this mighty people.

I venture, then, to claim attention as I take a rapid survey of the Sanctuary or Chapel of Edward the Confessor, and briefly notice the noble tombs by which the Shrine is surrounded. I must own that I can never enter without emotion and reverence this hallowed spot—this circlet of royalty, which introduces one, as it were, into the awe-inspiring presence of a "royal fellowship of death;" of

> "Monarchs the powerful and the strong,
> Famous in history and in song
> Of olden time,"
> (Longfellow, *Coplas de Manrique.*)

whose valour, whose virtues, whose sufferings, and whose piety afford so many touching lessons of the greatness, and at the same time of the weakness, of human nature.

In pursuing the description of the Chapel of Edward the Confessor, it will be well to follow the chronological order of the dates of the tombs. I must, therefore, remind you that Edward the Confessor, the last but one of the Saxon kings, after an eventful life, and a reign of twenty-four years, died in 1065-6. He had previously rebuilt the dilapidated old church of St. Peter, but being seized with sickness, he was prevented attending the consecration, and deceased a few days after it. Various miracles had been attributed to him during his lifetime, so that he was worshipped as a saint long before he was canonized. A first application to the Pope had been unsuccessful to get him placed on the Roman Calendar, but a second appeal to the papal throne was more propitious, and Alexander III. enjoined "that the body of the glorious king should be honoured here on earth as he himself was glorified in heaven." On the return of the messengers the remains of the sainted monarch were, in 1163, solemnly translated by Archbishop Becket into a new and precious Feretry, which had been prepared by Henry II. about ninety-nine years after the death of the sainted Edward.

When the choir and eastern division of the Abbey Church, which was then rebuilding, had been completed by Henry III. so as to admit of the celebration of divine service, "that sovereign resolved," says Wykes, "that so great a luminary should not lie buried, but be placed on high, as on a candlestick, to enlighten the church." In 1269 the body of the Confessor was removed, above 200 years after his decease, into the new shrine, the form and decorations of which we shall consider after we have described the other royal tombs.

The communication with Rome by our ecclesiastics was then extremely frequent; the more so, as every new abbot had upon his election to go to the papal seat for the confirmation of his appointment. At that period the system of mosaics, illustrated by Mr. Digby Wyatt in his exquisite work on Geometric Mosaic of the Middle Ages, was much in vogue. These styles are evidently of Byzantine origin; and specimens are to be found in the Capella Palatina at Palermo, in the Cathedral at Monreale, in the churches of St. Maria Maggiore, San Lorenzo, and Santi Giovanni e Paolo in Rome, of St. Mark at Venice, and in other parts of Italy; as also at Canterbury Cathedral, in the Sanctuary of A'Beckett.

The king and monks of Westminster were anxious to give peculiar and elaborate magnificence to this shrine, and consequently it was executed with glass mosaic decorations, the floor also with a geometric marble-mosaic pattern, and the tomb of the Royal Restorer, Henry III. shines with the like brilliant work. Another fine specimen of a different style, the marble tesselated work, is the magnificent pavement in front of the abbey altar, to which I shall hereafter revert.

Here, then, we have illustrations of a style of art of rare occurrence out of Italy; three out of the four are unnoticed even by the intelligent author of the work just alluded to. In Paris none such exist!

The cenotaph of Henry III. if met with in Italy, or the Holy Land, or Constantinople, would be quoted for its design and enrichments. From the pavement of the north aisle of the choir rises an elevated basement, on which rests the lower division of the royal tomb. Its face has three square compartments: the centre one was once filled in with a circular porphyry panel, circumscribed with interlacing bands of glass mosaic, and the spandrils occupied with smaller circles of the like work. The outer panels are square, placed lozenge-wise, or serpentine, also enclosed in mosaic bands and with circular smaller panels in the spandrils. At the ends are pilasters with a twisted column at each angle. The upper compartment of the tomb, on which lies the bronze effigy of the king, has two spiral columns at the angles, the flutings filled up with glass mosaics. The centre forms one large panel with a noble slab of porphyry, surrounded by a border of glass mosaics, and held in its place by four bronze pins, the ornamental heads of which project beyond the face of the porphyry. The elevation towards the shrine is different in design, but presents, with some variation of details, the like general divisions. Most of the slabs of precious marble are abstracted or split, the mosaics picked out, the columns deficient. The recumbent statue of the king, now covered with dirt and rust, is of brass—the first, according to Walpole, that was cast in this kingdom: it was once gilt, and probably parts of it enamelled; and the very plate on which he lies is covered (sémé) with the English device of the lion. But the canopy above the royal head is *gone*—the couchant animals *gone*—the side pillars or buttresses *gone*—the kingly staff and sceptre *gone*—and the wooden canopy above to keep off the dust is a bare fragment.

It appears that, after a troubled reign of fifty-two years, Henry III. died, at the age of sixty-six years, and was buried by the Knights Templars, of whose order his father was the founder, and with such splendour, that Wykes the monk says, he made a more magnificent figure when dead than he had ever done while living. Tranquil and pensive is the expression of the royal features, betokening other cares and other thoughts; and his spirit is now where wars and tumults exist not. But our shame, as Englishmen, is not the less, that we leave in such neglect so sacred a deposit of a venerable sovereign—so rare a monument of ancient taste.

In the intercolumnar space to the west of Henry III. lies his son Edward I. the English Justinian, who was, to use the words of the accurate Brayley, at the same time a gallant warrior, an able statesman, a wise legislator, in domestic life a faithful and affectionate husband to his excellent Queen Eleanor of Castile, and a good father to his children. His tomb is a large plain one, composed of five slabs of grey marble, without any pretensions to decoration, and as unostentatious as the beautiful memorials which he erected to his excellent queen are rich in all the embellishments of Gothic art. The tomb of his beloved Eleanor lies in the intercolumnar space, east of her father-in-law, Henry III. She it was who accompanied her warrior husband, Edward I. in all his journeys and expeditions, having in Palestine, as it is recorded, sucked the poison from the wound inflicted in his arm by the dagger of an assassin. She was his partner for six and thirty years, and died in 1290, seventeen years before her husband. He was then fifty-one, and so tenderly attached to the memory of her conjugal virtues and affection for him, that he ordered the erection of the celebrated crosses between Lincoln and London, some of which still remain at Edmonton, Waltham, Northampton, and Geddington, and the refinement and variety of whose design and execution are admirable. The last resting-place of this best of England's queens is no way inferior to the other memorials of her virtues; but the same melancholy story must be told of the tomb of the lovely Eleanor of Castile as of that of Henry III. The exquisite beauty of her features realise the Greek type of loveliness, and in fact, so sweet is the expression, so harmonious are the features, so perfect the profile, that it is said later sculptors adopted her likeness for their figures of the Virgin. And it is curious to remark, that although she must have died at an advanced age, above fifty, for she had been married six and thirty years, and had been the mother of

* Read at the Ordinary General Meeting of the Royal Institute of British Architects, on the 23rd instant.

fifteen children, yet she is represented young and beautiful, as when Edward first wedded her. But all her beauty and grace and virtues have not secured the marble of her tomb from decay, nor the bronzes from abstraction; the very wand or sceptre has been stolen from between her graceful fingers, and the jewels from the crown which encircles her head. The statue and its accompaniments are of brass, once partially enamelled and profusely covered with devices of Castile and England, but obscured by the crust of dirt which now conceals them. May the present century, thou beauteous noble-hearted daughter of Castile, render thee the justice and respect which were shown thee by thy well-beloved husband!

It appears from the contract, which still exists, that Richard de Coverdale undertook the marble-work of this tomb, and W. Torrell, the goldsmith, the statue, which was completed in 1292. It would be important for the history of English art to ascertain, if possible, whether Torrell, if not himself an Italian, as is supposed by some with an easy modification of the name, making it Torelli not merely Torrell, may have employed, as is done now-a-days, some distinguished English or foreign artist, most probably an Italian, to model and execute the bronze-work; for we need not necessarily conclude, because the contract was taken by a goldsmith, he was himself competent to design the figure, although he may have had all the conveniences for the mere mechanical operation of casting it. Edward I. endowed the Abbey with lands, then valued at 200*l.* per annum, for maintaining the worship and religious rites connected with the tomb, but these possessions were confiscated at the time of the Reformation, 250 years after.

It is unnecessary for me to make more than a passing allusion to the alabaster* tomb of Queen Philippa. The appeals that have been made to the public to raise funds for its restoration, and the exquisite specimen of the work, which was one of the attractions of the Great Exhibition, will have made you familiar with the value of this monument as a work of art.

We next come to the cenotaph of the heroic Edward III. which is on the south side, immediately opposite to that of Henry III. This is a magnificent memorial, consisting of a lower pedestal, 4 ft. high, next the aisle, divided into four quatre-foiled panels with highly elaborated tracery, having central metal shields exquisitely enamelled and emblazoned with the arms of England and France. This pedestal is surmounted by the altar or pedestal tomb, which has on each side six canopied niches; to these are still attached the bronze figures, 18 inches high, richly enamelled on the surface. The tomb is of Petworth marble, the architectural enrichments being generally decayed, yet enough remains to supply authorities for every portion. The venerable figure is of brass, of noble features, and flowing beard; the ensigns of royalty, which he once held, are destroyed. He is surrounded by a recumbent bronze tabernacle of elaborate tracery with numerous figures beautifully cast and wrought; and although many portions are deficient, yet they exist in other parts, and with little expense might be replaced. There is above the tomb a richly worked oak canopy, almost entire, and wanting little to restore it to its original splendour. Yet scanty as the sum would be to render this tomb as perfect as when it was first put up, the spirit is wanting to render this tribute to the Conqueror of Cressy, the father of the Black Prince, to him who won the field of Poictiers, the founder of the Order of the Garter, and who erected Windsor Castle. On the margin of the table the aged monarch is described as "the glory of England, the flower of past kings, the type for future ones—a clement king, the peace-giver to his people."

The interspace between the next pillars is occupied by the tomb of the unfortunate Richard II. and of his Queen Ann of Bohemia. It is of like design with that of Edward III. of the same materials, and possibly executed by the same artist. The surface of the marble is frightfully perished, and all the elaborate tracery, tabernacle work, buttresses, and finials present a time-worn surface, in many parts wholly defaced, and all the sixteen metal statuettes are gone! The recumbent brass statues of himself and queen lie side by side, once gilt and covered with worked devices. The arms and hands of himself and queen, and the sceptres and ball and cross, which they held, are wanting, as also the lions, leopard, and eagle, which once lay couchant at their feet. The masses of the recumbent tabernacles alone exist, despoiled of their enrichments and side pillars, or buttresses and angels. The bare arch of the oak canopy remains without the carved work, which embellished the summit, and the cornice and upper range of battlements. The colours with which they once glowed and which gave expression and relief are now tarnished or defaced, but still the soffit of the canopy displays unmistakeable evidences or traces of pictures with religious or historical subjects of considerable size.

Is it not mean-spirited and ignoble in a nation such as ours, to suffer so fine a work of art to decay, and such dishonour to be done to the unfortunate son of the Black Prince, the glory of England's chivalry?

The tomb of the gallant Henry V. the hero of Agincourt, occupies the east end of the sanctuary, under a stone canopy, which forms the chantry. As we know that oak chantries were not unusual (witness that at St. Albans), and as it was customary to have one in sanctuaries, which contained the tombs or shrines of saints, I am led to think that possibly in this part might have been an old oak chantry, and that Henry V. finding all the spaces between the piers occupied by the tombs of royal personages, and anxious to be placed in the regal circle around the shrine, may have assumed this place to himself, and replaced the wood chantry with a stone one; yet so arranged as to form at the same time a superb canopy to his own tomb.

The architecture of this cenotaph is not so much damaged as many others. This, I think, arises from its being enclosed by the substructions of the chantry and the ceiling, which protects it from the damp. But the sculptured groups, whether of stone or metal, which once filled the deep recesses of the sides, are stolen. The wood block of the figure and frame, on which it rests, were once covered with a more precious metal, tradition says silver; the carving shews the parts and drapery very completely, but the head, which it is said was of pure silver, is gone. The open iron railing and gates, enclosing the west end of the mausoleum, are a most curious specimen of elaborately-wrought metal work. They were once removed, but have since been most judiciously replaced by the Dean and Chapter.

Two modest marble caskets, once enriched with bronzes, contained the infant remains of daughters of Edward IV. and of Henry VII.—

"Quam longa una dies, ætas tam longa rosarum"—

with simple moulded plinth, die, and cornice. But one is almost fallen to pieces, and the slabs, which a few shillings might secure, are dilapidated and falling to ruin.

The sword and shield, which were borne before the heroic Edward III. in France on those battle-fields, whose names are "familiar in our mouths as household words,"* are here exhibited. The helmet, shield, and saddle of Henry V. are still attached to the pillars above his tomb. Dusty, dirty, torn and distorted, these memorials of Cresy and Agincourt seem only worthy (apart from their mighty traditions) of an old metal shop.

The throne on which our present august Sovereign was crowned, as also most of her predecessors, shares the same neglect, and has alike been despoiled of its finials, its crockets and carvings. A thin coating of plaister shows where the painter's art once shone in all its glory. The other is of doubtful origin, and patched up in a bastard taste with panels of Italian design. *Proh pudor!*

Having thus briefly noticed the tombs around the shrine, we will now proceed to consider the tomb of the Confessor himself; not that I would seek to revive a worship which every Protestant must hold to be superstitious, but I know not why we should deny to the tomb of a holy and pious man that respect which has never been withheld from by-gone worth. And surely, apart from religious considerations, and on historical grounds, we may desire the restoration of so ancient a monument of art and the preservation of a memorial of a much tried and devout monarch.

THE SHRINE OF EDWARD THE CONFESSOR.

This tomb of the most eminently pious of our kings is as melancholy a fragment of royalty as can be well imagined. Placed in the centre of this sanctuary, it rises the most prominent object of the whole of the royal and sacred shrines, and is at the same time the most humbling witness to our shame. A more august yet pitiable memento of the transitory nature of all earthly greatness cannot be conceived. For a cumbrous shapeless mass, stripped of its sparkling mosaics, despoiled of its elaborately enriched columns, its summit superseded by a subsequent incongruous architectural termination, itself in ruins, now contains the relics of the holiest of our line of monarchs, round which kings and nobles, the various states of the realm and the city of London in its palmiest days, were wont to come and pray and tender their choicest offerings. It seems as if the zealous Protestant, in horror of superstitious worship, were willing to cover with dishonour even the tomb of his kings, however eminent their piety, however noble their character, however beneficial their wisdom had been to fair and bonny England in ages past.

I must quote this as a solitary instance that remains in this kingdom, and one of only a few still extant in Christian Europe, which retains somewhat of the form and substance even of a stately shrine. Where is now that glory of England, the shrine of her protomartyr St. Alban? of St. Cuthbert at Durham? of the imperious A'Beckett at Canterbury? and so many others that I might quote, once the religious pride of our country?

This tomb is oblong in plan, with a column at each angle, which were twisted and the spiral flutings filled with mosaics. The capitals were of early lancet character painted and gilt. On each side are three recessed trefoil-headed niches, and one at the east end, in which were probably exposed the other sacred relics presented to the shrine. The whole surface was covered with elaborate geometric figures, sunk in the stone, and filled in with exquisite mosaic of the Byzantine character, and glistening with gold, red, green, and blue, many sparkling fragments of which have still been spared. One capital alone remains "in situ." Fragmental portions of two large shafts still exist, and support a large slab, 5 feet 4½ inches long by 3 feet 4½ inches high, filled with mosaics, interlaced in geometric forms, and probably placed, where it now is, upon the suppression of the shrine-worship at the reformation. The panels consist of porphyry and green marble. Up to the cornice we may consider that the feretry presents the main mass of the original design of the time of Henry III. (1269.) But it appears that at the period of James II. an upper division in wainscot was added, consisting of two stories of arches, pilasters, and entablatures of Italian or Palladian architecture, parts of which were inlaid with Marqueterie-work, in imitation of the mosaics of the lower division. And at this period, probably, it was endeavoured to repair the dilapidated state of the antique work, by filling up the parts whence the mosaics had been abstracted with plaister, and painting the surface in imitation of mosaic work.

On examining the floor at the west end of the shrine, there are evidences of the space occupied by the altar, where daily masses were said. And I am led to presume, that the large tablet now upraised on the truncated columns formed the front of the altar.

In order to enable us to appreciate the original design of the shrine, I would venture to offer a suggestion as to the appearance of this

* It is curious to remark that the alabaster monuments in Westminster Abbey have better resisted the corroding effects of the damp atmosphere than the Petworth marble, and that the deterioration of those memorials arises entirely from wanton mischief.

* Henry VI. Act iv. Sc. iv.

remarkable monument in its pristine form and arrangement. I would call to your mind the numberless reliquaries of silver gilt which remain to us of the mediæval times, like that for instance of St. Albin at Cologne, or the gorgeous one at Aix la Chapelle, their sides divided into spaces by columns and arches, surmounted by gable-ended roofs, formed into panels with sculptures, and brilliant with jewels. These reliquaries are but imitations of the larger shrines of the Roman Catholic calendar. I conceive, therefore, that this of the Confessor, with its spiral columns restored at each angle, its mosaics complete, its niches filled with its precious relics, its gable-ends flanked with pinnacles, and the sloping roof enriched with panels, its altar in front, and its mosaic floor, must have presented an imposing spectacle sufficient to awaken and exalt the fervour of the pious pilgrim.

The floor of the chapel consists of a tesselated mosaic of interlacing circles, of meagre general effect from the insignificance of the parts, which are not arranged in grand divisions; the individual patterns, however, are graceful and full of fancy: and you may form some idea of it from the half-sized illustration on the wall.

But my subject irresistibly leads me *not* to conclude these descriptions, without calling your attention to the magnificent mosaic on the west side of the altar-screen, of the class that Mr. Digby Wyatt calls opus Alexandrinum. It is as fine as any example existing in Italy. It was originally 25 feet square, but a modern arrangement of the steps in front of the communion table, has reduced the margin on the east side. It is traced, but on a very minute scale, in Neale's plan to Brayley's work. The arrangement of the tesseræ is precisely like that of the example from the choir of St. Marco at Rome, and something in the style of the mosaic in St. Lorenzo fesori le Mura. From the recorded inscription, part of which still remains in brass letters, it appears to have been laid down in 1268, at the time of Henry III. The larger tesseræ consist of porphyry, lapis lazuli, serpentine, jasper, alabaster, and white marble. The inscription, consisting of ten lines, occupied the bands round the circles and inclosing the great square. If this pavement were but slightly restored and polished, it would be one of the finest specimens of this class in Europe.

A serious question, from the consideration of which we must not shrink, next arises. Can these masterly relics of ancient art be restored without compromising their authenticity, without permitting the fancy to supersede sober judgment, and thus preserve them as unquestionable and unimpeachable memorials of our art history in England, and of the epochs they now illustrate? Let me ask what is necessary to accomplish this, beyond a doubt, beyond a surmise of corruption? A thorough knowledge of the different phases which mediæval art assumed not only in this, but in other countries during five centuries; a scrupulous and submissive respect for the taste, the skill, and genius of the men of that period, and for the art, which they enriched by their talents; an absence of self love. If such be the qualification, I boldly declare my conviction, that in no period of this country, not even in the ages just quoted, existed there men more competent, more faithful, more zealous to accomplish this great work. In the middle ages the artists disregarded the tastes of preceding periods, and ingrafted on an incomplete work the style of their own epoch. But now the very essence of our school is synchronism, and an almost slavish adherence, as it were, to precedent—a laborious search for examples and authority;—not a monument unvisited—not a book unread—not a MS. unexamined,—that contains aught to illustrate and explain the arts of those times.

We have architects, too, whose own works may side by side contest the palm with the buildings of the olden style. And this work might be entered upon with the more confidence under the sound judgment and discretion of the actual professional adviser of the Dean and Chapter, for his taste and skill are proved in the numberless churches which he has erected; his knowledge in gothic art cannot be excelled; his feeling for it is most intense.

I seek to avert a vast, a lamentable, a dishonouring destruction, ere it be irrevocable; a calamity, the possibility of which I feel none here present can contemplate unmoved. I ask for no rash nor extravagant re-construction, but merely a replacing of what is evidently known as having once been there—a repetition of what in other parts of the same monument may already have survived the wantonness of wilful dilapidation, or the waste arising from neglect.* And never were coincidences more favourable—never was the work more called for, which it has been, perhaps, reserved for the honour of the present times to realise. What would more excite the loyal feelings of the numerous visitors to the Abbey, than to see the tombs of England's glorious monarchs treated with respect by those in power, and restored to comparative completeness. And what a moral and historical lesson to teach them, how much we owe of the reputation of the English name in mediæval times to their heroism, and much of our present liberties and greatness to their wisdom. The visitors also would see the progressive history of mediæval art during three centuries, and learn to appreciate the beauties of each successive development. Is it wise in our Government to let the people see the tombs of our most glorious kings dishonoured, and that a feeling of loyalty and affection to past dynasties is of no consequence? Is there not something august and venerable in the kingly state, and shall we allow the record of a dead monarch to be despised and neglected? Is it wise at such moments as these, when all that can possibly be done should be accomplished, to gather round the throne and its antecedents the sympathies and affections of the people, to allow the dust of the dead kings to be as of no value? Let us hope, then, that the Government will awaken to its duties. It is the common custom of the land that a family is answerable for the maintenance of the tomb of a deceased relative. Is there no tie of affection and reverence between the crown of to-day and of past times? The Abbey authorities have of late years done much; but they have not the means to effect all that is required: and there is, besides, no pretence to call upon them to restore the tombs deposited within these sacred walls. Their funds are little adequate to uphold the fabric. And the endowments, granted by royal munificence, have been since confiscated. Let us hope, then, that the high-minded advisers of the sovereign will appreciate this duty, and show their loyalty to the throne, and prestige of the Crown of England, by causing the restoration of these dilapidated memorials of ancient sovereignty. Then, to use the Prophet's words, "*these dead bones shall speak*," not of neglect, destruction, and contempt as now, but of glories achieved. They shall *speak* of virtues long since. They shall *speak* of goodness, which we may even now imitate; and by comparison they shall teach us by their mute eloquence to value the virtues, the noble mindedness, the patriotism, and wisdom of Her who now rules over a mighty and a happy people, loving the present, yet anxious also to honour the past!

T. L. Donaldson.

The Theatre Royal Drury Lane.—For the new *Ballet Fantastique*, called "The Star of the Rhine," in which Madlle. Plunkett displays some charming dancing; there is a pretty scene of country on the borders of the swift river. In some cases, Mr. Bunn has scarcely done so much for his pieces in the way of scenery as is desirable. His company is very strong, and he has trusted to that; completeness, however, is much looked for in these days, and we hope he will not lose sight of this in the forthcoming opera by Balfe, which is now announced.

* A thorough investigation of these precious memorials might bring to light treasures of art, of which we may not have any conception; and of which we may form some idea from the success which attended the slightest cleansing by the intelligent Hollis on a portion only of the tomb of Richard the Second.

THE NEW UNIVERSITY OF ATHENS.

It is so far back as the year 1837, that the Grecian government had decreed the establishment of an university in the ancient capital of learning and refinement. But there was no building extant where such an establishment, shaped after those of Germany, could have been conveniently placed. It was M. Rhally who conceived the plan of appealing to the sympathies of the whole of Europe for this great undertaking. Konduriottis and Kolokotroni were amongst the first members of the committee named for that purpose. Some of the Greeks at home and abroad subscribed each 20,000 to 25,000, nay 30,000 drachms towards the building of the new university. As soon as an adequate amount was in hand, M. Christian Hansen, a Danish architect, was applied to. He had come in 1830 to Athens to study the Parthenon; but the works of Phidias and the sky of Greece had kept him nine years in this interesting spot. It was in 1839 that M. Hansen began the building and successfully conducted it to its termination.

The situation of the Athens University is unrivalled. Even our best educational buildings in the north of Europe are, if not crammed up between, at least surrounded by, other houses, keeping out every lofty and elevating view. If, on the contrary, we ascend the marble steps of the Athens University, we perceive on all sides remains of sublime character: straight before us the Parthenon and the Acropolis; aside the Acropolis, the Areopagus and the rock of the Pnyx, where Demosthenes delivered his speeches. Towards the south-west, rises over the glittering sea the island of Ægina; in the west, Salamis. Thus, here, the present and the past will be equally instructive and elating. The style of architecture to be chosen in this locality could not be doubtful—the more so, as even the same material was to be used, which served for the erection of former buildings, more than 2,000 years ago. A large vestibule under the façade of the building seemed indispensable, for affording the students some relief under the sultry climate. But as the front is turned south, and shone upon the whole day by the sun, a wall was to be partly run up, ornamented by pillars. Another particular feature of the edifice is, that the lecture-rooms and staircases are lighted from above, and the aula is surrounded by galleries for the accommodation of visitors on festival occasions. The walls are built of marble from the Hymettos, and the arches of doors and windows of substantial brickwork, the walls covered with stucco resembling marble. The porticus, with its columns, fronton, and stairs, is of white Pentelic marble, as well as all capitals and architraves. The chief cornice consists of bluish, polished Hymettos marble, and the halls and passages are paved with white and black marble from Tinos. The columns of the staircases and the aula are monolithes of white marble of Tinos. All outer ornaments have been painted in the way of antique buildings, with exception of the Ionic capitals, which are sculptured; and the capitals of the columns of the porticus are scantily gilt. The roof, when completed, will consist of tiles of antique shape and construction.

Mediæval Museum for Study.—At a meeting, on 23rd inst. of the committee of gentlemen who have interested themselves in the promotion of art-workshops, present—Messrs. Scott, Clutton, Pearson, Hardwick, Penrose, Clarke, Gibson, &c. it was resolved that means be at once taken for the establishment of a museum of casts from architectural ornaments and other works useful to artisans employed in architecture. An extensive list of annual subscribers, and of donors, whether in money or in specimens to the museum, is desirable, and is, if possible, to be realised; and when the museum is established, Mr. C. B. Allen is to be appointed curator, with the free use of the museum for the purposes of his proposed art workshops, during the pleasure of the committee. Mr. Penrose has consented to act as hon. secretary to the museum.

LETTERS TO A LADY,

EMBODYING

A Popular Sketch of the History of Architecture,

AND THE CHARACTERISTICS OF

THE VARIOUS STYLES WHICH HAVE PREVAILED.*

My dear Sorillah:

I AM delighted to find that my first letter has interested you sufficiently to lead to the suggestion, that the notices of some of the monuments alluded to might have been fuller without being tedious. You will observe, however, if you look back, that I had not completed my remarks on Stonehenge, and we will now, if you please, return for a few minutes to that most extraordinary monument, which, in some respects, has no parallel.

In many parts of the world, including America, large circles of upright stones are to be found, but Stonehenge is peculiar and distinct. Most of the stones there have been worked square by hand,—and on the top of the upright stones, projections, technically called tenons, are formed to fit into indentations, or mortices, in the horizontal stones, so as to confine the whole together.

The diameter of the outer circle is 105 feet; of the second circle, 87 feet. The height of the stones composing the outer circle is nearly 16 feet, their width 7 feet, and their thickness 3 feet; those forming the trilithons are several feet higher; I calculated the weight of one of these to be 19 or 20 tons. Around the whole is a vallum or ditch, 300 feet in diameter, having an opening on one side approached by a wide avenue. Some of the American inclosures are five times as large as this.

The age and purpose of Stonehenge have given rise to a vast deal of discussion. The first published notice of it occurs in the works of Nennius, who wrote in the ninth century, and states that 460 British nobles were murdered at a conference between Vortigern and Hengist in the fifth century, and that Stonehenge was raised to perpetuate their memory. In a Saxon MS. given in Dugdale's "Monasticon," it is even called *Stanhengist*, showing its connection with the leader named. Geoffroy, of Monmouth, adopts the same origin, but brings supernatural agency in aid. Inigo Jones, in an essay on the subject, published in 1655, endeavours to prove that it was a Roman temple of the Tuscan order, dedicated to Cœlus: an opinion hardly less unsound than that of Mr. Browne, in 1823, who asserts that it is antediluvian, and rather suspects that Adam had a hand in the direction of it! One writer has asserted that the blocks are not stones, but are formed artificially in moulds! The opinion of the majority is, as you know, that the inclosure was constructed for religious purposes, under the direction of the Druids, at a very early date. Our friend Mr. Britton has a very interesting article on this monument in the *Penny Cyclopædia*.

I remember you were much interested by a paper on this subject read by the Rev. Edward Duke, at the Salisbury meeting of the Archæological Institute, in which the author repeated a belief expressed by him three years before, that Stonehenge formed part of a *planetarium*, in connection with Abury and other remains, having a meridional line of not less than thirty-two miles. He saw in the thirty stones and thirty spaces, the thirty days and thirty nights into which anciently the months were divided; and found the inclination of the ecliptic as compared with the plane of the equator, unmistakeably indicated by the angle formed by a line drawn from the top of the outer circle to the top of the trilithons. With this, however, I will not meddle. Mr. Squier, an American archæologist, who has recently visited Stonehenge, has pointed out by admeasurement that two detached fallen stones in the avenue originally stood in the centre of this, one behind the other, in a line with the main opening in the outer circle and with the centre of the altar, and maintains that they constituted the *veil* of the temple, the screen of the sacred place.

How these stones were raised and made to stand exactly their proper height is a matter for discussion, but I fear to detain you upon it. If we stay longer on Salisbury-plain, pleasant place as it is, we shall never get to the end of the long journey which is before us.

The temple at Abury, in the same county, was much more extensive than Stonehenge, but less artificial in arrangement, and probably of even earlier date. It consisted of one large circle enclosing two double circles. The area enclosed at Abury was more than twenty-eight acres. Two avenues of stones, communicating at different parts of the outer circle at Abury, produced the form of a snake, and have led to dissertations showing its connection with *ophiolatry*, or serpent worship — a very ancient superstition in Egypt and the East, and to which the primitive Druids were addicted. Although with us the symbol of the evil spirit, the serpent was recognised in India and Egypt, and also in Greece, as a friendly deity. Pliny describes the serpent's egg, which he says was worn by the Druids as their distinguishing badge. Many marvellous powers were ascribed to it. Some have conjectured that the temples of which I have been speaking, as well as Carnac, in Brittany, and others, were dedicated to the united worship of the sun and the serpent, and that their form was emblematical of the combination. An "intelligent foreigner" who, gazing back at night from Hyde Park along the serpentine line of light which the lamps up Piccadilly produce, found in that a proof that the Londoners of to-day are ophiolators, would have as good ground for his belief as some of the theorists on this point.

In a more extended disquisition than this, cairns, cromlechs, and logan stones might be noticed, although of later date than other structures of which we have to speak.

The Dolmen or Cromlech, a flat stone supported on three or four upright stones not contiguous, was at one time considered to be an altar: the fact is, however, it merely marks the burial-place of the rich, as the simple barrow does that of the more lowly. In some cases it was covered by a barrow. Kits Cotty House, near Maidstone, in Kent, is a well-known example of a cromlech. The top stone of this is 12 feet long and more than 9 feet broad. The logan stones, or *rocking* stones, found in various parts of the country, are doubtless natural productions. The softer parts of the stones have been worn away by the weather, leaving a mass poised so accurately on a point, that very little strength is sufficient to rock it, although to shift it from its position would be very difficult. It is said, with what truth I will not decide, that these stones were made a test of innocence in early times. Mason, a dramatic poet, has a passage describing the ordeal, which occurs to me. He says—

——"Behold yon huge
And unhewn mass of living adamant!
Which, pois'd by magic, rests its central weight
On yonder pointed rock. Fixed as it seems,
Such are its strange and virtuous properties,
It moves obsequious to the slightest touch
Of him whose breast is pure; but,—to the traitor!
Although a giant's prowess nerved his arm,
It stands as firm as Snowdon."

It is not necessary to say that the result rested with the presiding priest, and might be produced by a very small wedge. We must take care, however, not to outrun our subject. Many pleasant paths for examination open out of the high road, but if we were to pursue them all, we should soon get astray from the main line. We must return to an earlier period.

Amongst the earliest recorded facts connected with the history of architecture after the Deluge, is the foundation of the city and tower of Babel, shall we say, 2200 B.C. You will remember it is stated that, as the people journeyed from the East,—and let me remind you, in passing, that the course of improvement has been in a singularly marked manner, from the East to the West, or more strictly, the North-west, as, from Asia-Minor to Greece, to Italy, to Gaul, and to Britain; and is so indeed in many modern towns;—as they journeyed from the East they found a plain in the land of Shinar, and settled there. Here, prompted by a desire "to make a name" (the desire still haunts some of us), an ambition to be known to posterity, they burnt clay to make bricks, and with the slime or bitumen, of which there were natural fountains, they began to build a city, and a tower to reach to Heaven. Babel, you know, was in the kingdom of Nimrod, called the mighty hunter, who afterwards built Nineveh. Josephus terms him the founder of the city of *Babylon*, and Bryant says, he was sometimes called Bel or Belus, but this title was applied to many.

Now concerning the progress of this last-named city, Babylon, the chief city of Assyria, the deepest obscurity prevails, even more than might be expected, notwithstanding its remote date. Queen Semiramis is said to have surrounded it with high walls, and to have erected a lofty monument to Belus about 2,000 years before our era; but there are so many contradictory opinions as to the time at which this queen lived, even to the extent of 1,500 years, that it is difficult to arrive at a satisfactory conclusion upon it. More recently it has even been argued by Sir William Betham, that this queen never existed at all, and that her history is an allegory showing the power of maritime commerce! What are we to believe? you will say. For my own part I have strong faith in a real live Semiramis.

Herodotus, who wrote about 450 years B.C. describes Babylon at some length, but speaks with uncertainty even then of the date of its foundation. He says (Clio, clxxviii.) that it was of the greatest strength and fame in the Assyrian empire, and exceeded in internal beauty and magnificence whatever had come within his knowledge. It was a perfect square

* No. 2. See p. 100, *ante*.

of great extent, surrounded by a wide ditch (whence the earth had been taken to make bricks), and a wall 300 feet high or more. On the summit of the wall were watch-towers at short intervals, and in it were a hundred massive gates of brass, with hinges and frames of the same material. In *Isaiah* mention is made of "gates of brass." The city is described as regularly divided into parallel streets, with houses three or four stories high. Avenues leading to the river crossed these at right angles, and each was terminated by a gate in the wall.

The Temple of Belus is described by Herodotus as an enclosure two furlongs square, closed with huge gates. In the midst was a tower of the depth and height of a furlong, "upon which, resting as a base," were seven other turrets in regular succession. The ascent was by a winding road, carried round the outside. I annex the outline of such a

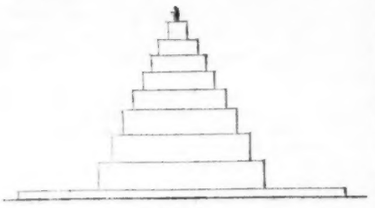


Fig. 5.

structure. It is the type of a large number of monuments. If you recall the height of St. Paul's Cathedral, which you examined so scientifically the other day with the philosophic F——, you will see that these dimensions are so enormous as to be scarcely credible. Concerning the magnificence of Babylon, "the glory of kingdoms, the beauty of the Chaldees' excellency" (as Isaiah terms it), all the ancient historians are unanimous, and would lead to an idea of grandeur of which no modern city gives an example, including palaces, mounds, canals, bridges, and lakes. According to Diodorus, the palace was surrounded by three enormous walls, which were ornamented with animals in relief, richly painted in their natural colours on the bricks, and burnt in.

Amongst the extraordinary traces of Babylon still remaining is an enormous ruin, which is supposed to be the temple of Belus. The bricks of which this is composed have inscriptions on them, and the cement by which they are connected is so excellent, that it is nearly impossible to extract one whole.

Whether or not the form of the Tower of Babel was similar to the description given of the Temple of Belus, or whether or not there was even a closer connection between them, is uncertain. A tradition still current amongst the Arabs ascribes to *Nimrod* the erection of a high tower to reach to Heaven, which was overthrown the day after it was finished. Some enormous ruins, chiefly of burnt bricks, which remain, are still called by them Nimrod's towers ("Birs Nemroud").

The pyramidal form, as we shall hereafter see, was long prevalent in India, Mexico, Egypt, Greece, and other countries, and many ancient buildings, in steps or stories, similar to the Temple of Belus, which I have described, are to be found; as, for example, the Hindu temples at Chalembarum and Tangore, the great Mexican temples, and some of the smaller Egyptian pyramids. This rough pen-scratch represents one of the latter.

Fig. 6.

Until very recently little or nothing was known of the ruins in Assyria and Babylon. Mr. Rich, in 1820, was the first person who examined and described the remains there at any length; but until four years ago our knowledge on the subject was of the most confined nature. It was left for Dr. Layard and M. Botta to investigate these mysterious mounds, the contents of which have rendered us familiar with the people and their arts to an extent that could not have been anticipated, and have corroborated in a wonderful manner many parts of the holy writings. You, I know, have seen and studied with your usual intelligence and energy the surprising relics of a mysterious past—winged bulls and engraved slabs—which have reached us through Layard's researches, and have been deposited in some cellars at the British Museum. They have been so long buried, that it was, perhaps, thought they could not yet stand the light. It is scarcely possible to contemplate these wonderful monuments — some of them contemporary with Abraham, and dating probably more than 2,000 years before our era—without emotion. These inscribed stones were the records of that early time—and well have they fulfilled their office. The practice of thus chronicling events is often referred to in the Bible. Ezekiel, you will recollect, was told "to take a tile, and portray upon it the city of Jerusalem."

These slabs are of alabaster or gypsum, which was found in large quantities on the spot, and they were used to case the walls of sun-dried bricks which enclosed the Halls; above them coloured tiles were probably used. The walls went up only a certain height, perhaps 18 or 19 feet, and were very thick, from 16 feet to 20 feet. The winged lions formed the entrances. On the top of the walls, it is suggested, were placed two rows of short pillars (one on the inner, the other on the outer edge of the wall), which supported a flat roof of mud, and thus formed a series of upper chambers or galleries. As you are a reader of *The Builder*, you will remember a fuller account of this theory, as set forth by Mr. Fergusson (vol. ix. pp. 147 and 184); and of the remarkable progress that has been made in deciphering the cuneiform or arrow-headed characters which compose the inscriptions. The effect of the courts, with their colossal lions and bulls, their sculptured sides and painted and gilded decorations, must have been singularly imposing. We cease to wonder that Nineveh, now "a desolation and a waste," was the admiration and glory of the ancient world. From Assyria, Greece probably obtained part of her art, as we shall see by and by. If I occupy you longer, however, on this point, you will regret the expression of your opinion to which I alluded at starting, and I cannot afford to tire you yet, and so to lose your cheerful countenance. I shall be glad if you find every letter too short, and that it *suggests* to you more than it *tells*.

Believe me always yours,

Reggeo.

ROYAL ACADEMY LECTURES ON ARCHITECTURE.

Professor Cockerell, in his fifth lecture, proceeded to consider the great exemplars of antiquity; that school of forty centuries to which the great masters of theory in art referred in all their treatises. The study of antiquity showed what had hitherto seemed good in the eyes of men, and what was likely to appear so in the future. A man ignorant of the past, and without aspirations for the future, was like the beasts that perish; but enlightened by the page of history, his brief knowledge was extended over the forty centuries to which Napoleon had appealed in the battle of the Pyramids. Vast indeed was the growth of the soul by the contemplation of history; and the architectural remains of antiquity were especially recommended by their beauty; because relics so enduring must have been founded on geometrical, mechanical, or æsthetical principles; and whatever had so come down to the present age, as the result of long practice and skilful processes, claimed the highest respect and the most careful investigation. By these we might be enabled to restore some obsolete principle of art, or redeem some forgotten merit of the past. There was scarcely a relic of well preserved antiquity from the study of which we might not become wiser and better men. That superstitious reverence for the past which led to a love of antiquity for itself alone, should, however, be most carefully avoided. It was evident that our ancestors were men like ourselves, equally liable to vanity, eccentricity, affectation, and fashion, and that genius and energy were as rare among them as in the present day. Great were the obligations of the architect to the antiquary. The province of the latter was the investigation of truth and fact, by scholarship and calculation. The aim of the architect, on the contrary, was invention: he was bound to consult that imagination which the antiquary suspected and deprecated: his mind was devoted to the delights which he might borrow and appropriate from antiquity.

All the great architects of the Revival acted on this principle with immense success, and none among them more so than Palladio and his followers, Inigo Jones in England, and Vignola in France. Not only was the study of antiquity necessary to the architect, but ennobling, profitable, and delightful: his pleasure in the study of the fragments of ancient art was as great, indeed, as that of the child in the restoration of his dissected map or picture.

In reference to the study of antiquity, Vasari, in his "Life of Brunelleschi," spoke of the astonishment and rapture of that great architect on arriving at Rome, and beholding the vastness and perfection of its ancient edifices. Vasari, however, expressly states that he gave orders for the measuring of cornices and taking plans, whilst he himself spared neither time nor expense, and cared neither for food nor sleep, whilst he devoted himself to the examination of all those remains which were really excellent. This, indeed, was true economy. The time and thought of Brunelleschi were too precious for mere mechanical operations, and therefore he did not dull the edge of his genius by elaborate measurements, which an ordinary assistant might undertake. It was a common error of the artist to engage in futile and expensive labour, with a view to economy.

The architect should also avoid sacrificing his time to the study of obsolete and impracticable styles, such as the Egyptian, Chinese, or Saracenic; which he could scarcely ever have to employ in this country. However agreeable and interesting these styles were, scarcely any practicable result could arise from them, and they were mere matters of learning and curiosity. Rude and primitive in taste, they were tinctured with a vile superstition, which determined all their forms and colours, without the slightest reference to nature. No English architect would wish to reproduce Egyptian temples in York or London, or to see a modern palace covered with painted hieroglyphics: all the mind and character of Egyptian architecture was indeed out of date, and belonged to another hemisphere, and a distinct race of men.

On the score of practical utility, he felt also bound to place the architecture of Greece only next above that of Egypt. But the pilgrimage to the Parthenon would be ever justifiable. The teaching of Socrates and Plato was associated with their classic architecture, and the devoted admiration of it which the Greeks themselves displayed was proved in many ways. The knowledge of the scope of art among the Greeks was visible in every fragment of the sculptor's and the potter's art, which they had left behind them; and these remains led to artistic reflections, which must guide the artist whenever he was tempted by the meretricious graces of inferior styles. Still there was little that could be practically useful in Greek architecture. Its application to a horizontal country like our own he had before shown to be unsuitable, and the numerous valuable publications of Stuart and Revett, the Dilettanti Society, and others in France and elsewhere, embraced ample information for the English architect.

To show, however, the extent to which the study of antiquity might be useful, the lecturer

referred to the famous Mausoleum erected by Queen Artemisia over the remains of her husband, Mausolus, in the year 353 B.C. and lately referred to in our pages.

Few and rare were the examples of Greek art which could be made available under the laws of proportion which governed the arrangement of modern halls, chambers, churches, libraries, theatres, town-halls, prisons, and mansions. European travel, from St. Petersburg to Gibraltar, furnished a far more useful and practical source of education. By visiting and conversing with European architects; by examining their executed, and perusing their literary works, a complete digest and epitome of their experience might be obtained; and this would be the best course of study for the practical and ambitious architect. England alone furnished valuable means of instruction, rich as it was in masterly genius and excellent works. He never regretted the advice he had always given to his own scholars, to study the productions of their native land; and they had themselves acknowledged the advantages they had so derived.

Many who had enjoyed the greatest advantages from foreign travel had failed to profit by them; and many had achieved the highest distinction with no other aid than they could derive from books of travels and the resources of their own minds. Sir Christopher Wren, from want of means or other causes, had never travelled beyond Paris: and Brunelleschi was compelled by his necessities, whilst at Rome, to seek employment as a goldsmith, in order to pursue his architectural studies.

These strictures, however, on foreign travel did not apply to Italy in general, and more especially not to Rome, the direct source of all modern art. The Romans, eminently practical, approached architecture in the spirit of engineers; all their professional faculties were called forth in aid of law, learning, commerce, civilisation, and war; and with their knowledge of the arch and the dome, their works supplied a never-failing source of useful study. In Rome the student might trace the application of the elements of Grecian and all other ancient styles by the people of the empire; and side by side with them the admirable works of Raffaelle, Vignola, and the other great moderns, all of which he might apply in daily use; and the persevering investigation of which would prove to be time well spent.

Conspicuous among these works were the baths of ancient Rome. Of these we were told by classic authors that there were 800 in the imperial city, all more or less public. Fifteen of the more remarkable are still to be traced in their ruins, furnishing a grand treasury and storehouse of ancient art. The largest of these were the Baths of Caracalla, in which it is said that 108,000 persons might bathe between the hours of two and five daily. In proof of their enormous magnitude, the lecturer showed by a plan that they occupied a quadrangle equal in size to that formed by the lines of Pall-mall, St. James's-street, Piccadilly, and Regent-street; having St. James's-square nearly in the centre. He pointed out the admirable proportions and noble features of this stupendous work, its spacious halls and gardens, with other interesting features.

The decline of Roman architecture was then briefly traced, and the defects of the later important works pointed out. The palace of Diocletian presented a sumptuous plan, and an arrangement suggestive of oriental magnificence (and especially a corridor, worthy of particular study); but the architecture generally was below criticism. The works of the age of Justinian were further debased, and from the sixth century, architecture, as a fine art, was completely extinguished. In the twelfth century arose that Gothic architecture which displayed the most sublime equipoise, and the grandest effects, with the smallest comparative expense; and the religious and national associations of which must sanctify it in the hearts of all. Time would not allow him to dwell upon the many glories of that beloved architecture, nor the peculiar features of its German and other branches, which might be effectively introduced in this country.

WANTED, A RAMMER.

COULD not some modification of the steam-hammer, or pile-driver, be contrived that would apply to the ramming of paving-stones, and consolidating of gravelled or macadamized roads? The condition of both streets and roads seems to suggest that with a greater amount of consolidation, less of inequality and looseness would present themselves. Let the roller used on the gravel road be ever so satisfactory in principle, still its efficacy is limited by the proportioning of its weight to the animal power which is to overcome its inertia: not so where an impulsive force is put in operation by such a power as steam: the effect then produced will bear a different proportion to the dead weight of the machine, and to the power of the animal which may be employed to move it from place to place. Let the pavior even wield his rammer with ever so good a will, and bring good thew, sinew, and muscle to bear on his work, still the effect of the momentum which he can impart is limited in like manner; and is, we may infer, inferior to the action of endless trains of wheeled vehicles. To render our streets and roads more commensurate in solidity to the duty they have to perform, some more weighty apparatus than a one-man rammer or a two-horse roller is wanted: the effect of these, by the way, may be nearer a par than they seem, seeing the difference in the manner of their application; the main difference being in the extent of the ground gone over. It seems to us that a kind of frame-work, containing a number of heavy vertical rammers, say the former a yard square, and the latter nine in number, and lifted by steam power, in some such succession as may be imagined in a horse with as many feet, would effect the result we have in view; and if it were considered liable to the objection of leaving the ground uneven on the surface, let it be combined with a roller in rear, sufficiently heavy to obliterate the inequalities.

While on the subject of streets and roads, we may point out another want, namely, a trottoir for luggage-bearers: it is quite obvious that in London's thoroughfares, with its incessant trains of equine traffic, the porters cannot be driven to the roadway; while it is equally palpable that the bearing of head-loads of furniture, with wooden legs projecting at every imaginable angle, to the imminent hazard of the eyes and limbs of thought-bound wayfarers, is a growing evil that threatens to become intolerable. Those streets that would admit of it might be divided into five parts in their width, instead of three; the centre, as now, for the horse traffic, the house-paths for pedestrians, and the intermediate ways for all persons bearing ungainly burthens,—butchers' trays, bakers' baskets, and the like: the porters' paths might be a slight step lower than the house-paths, but the kennel should run outside the former, only affording facility for carriages crossing to set down their fares at the curb of the latter. For this purpose, the house-paths could, if necessary, spare a portion of their present width, the roadway supplying the remainder. The police would see to the former being kept sacred to their special purpose: the quality of the paving in the porters'-paths might be a superior square-dressed granite, in longitudinal courses.

The extensive use, in town, of the macadamizing principle of road-making renders of interest any suggestion for ameliorating its defects: in the summer of 1824, experiments were made by Mr. Gilmore, surveyor of the turnpike-road between Durham and Tyne Bridge, which had for their object the binding of the surface and laying the dust: these results, it was stated, were successfully obtained by the application of the oil of salt, which had the effect of rendering the paving firm and smooth,—the dust being more effectually mastered than it had previously been with water. Such a process might be a little expensive in the first instance; but if it superseded in a great degree the necessity for watering, it would probably be found economical in the main. Summer is coming: down with the dust.

In the same year as the above, a patent was granted to Mr. A. H. Chambers, for the following method of constructing paved carriage-ways: a bed of well-compressed clay, with a channel on each side for carrying off water, was to be first laid down;—upon this a thin stratum of sand, and upon the latter, the ordinary granite paving-stones: the latter, however, were to be laid with their broad ends downwards, the interstices filled with hard materials, and the whole covered with some burned and vitrified substance, incapable of reduction, by moisture or friction, into a soluble matter. Now, some part of this is very sensible: the stones, instead of having their fangs planted into the pliant soil, to gnaw their way downward, and force the soft matter below to escape upward, and form mud or dust upon the surface, are laid so as to obviate that effect, and also to receive superimposed pressure within the area of their respective bases. It only wants that their apexes should be made parallel with their beds, and the interstices be filled with small macadamising, served with the oil of salt as above described, to form what would probably prove a good lasting causeway.

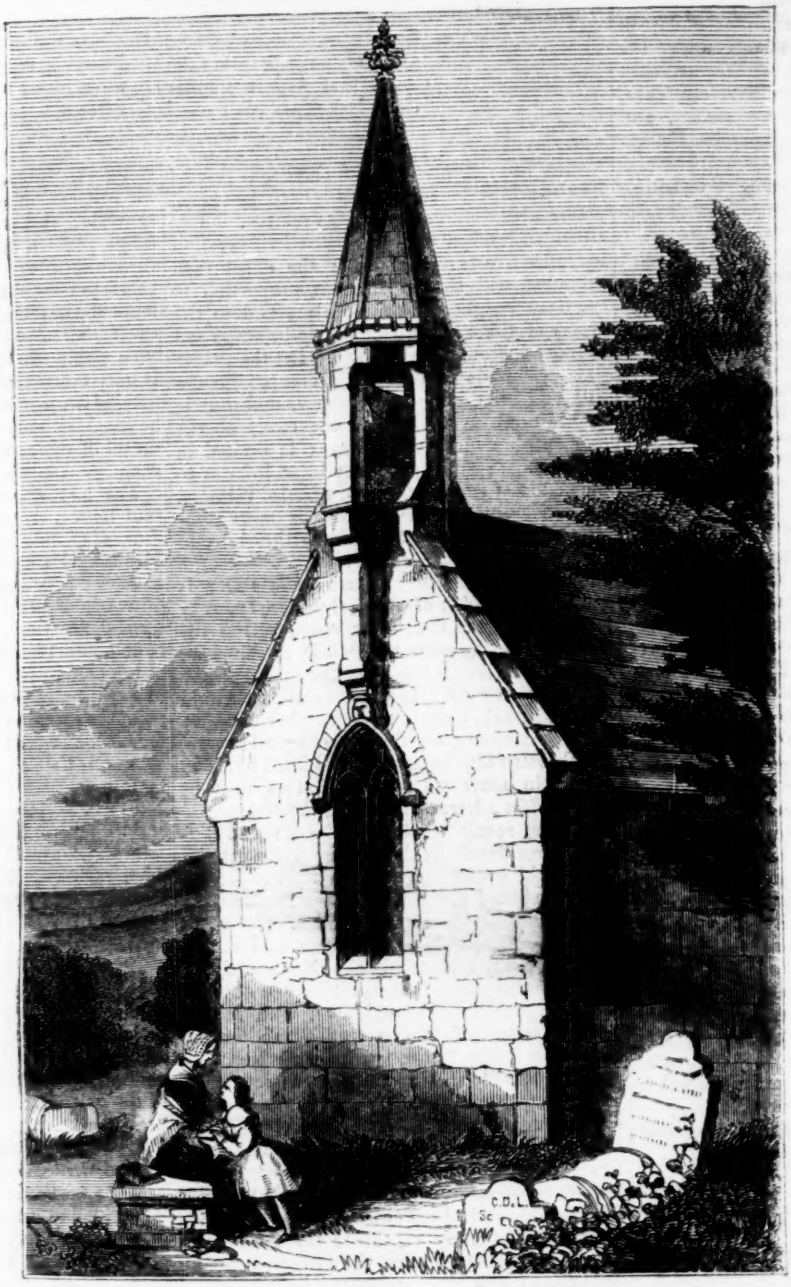
The last of such plans that we shall at present notice, is one proposed in the *London Journal of Arts* in 1825, by an Ayrshire farmer, Mr. John Finlayson. The method of paving which he proposed, consisted in setting blocks of wood, with the grain vertical, into sockets formed for them in iron castings; the blocks to be about 18 inches long, and 8 inches square at top and bottom ends, but increasing in size to a point a little below the middle: up to this point they were to be fitted solidly into the castings, which were to be about 4½ by 2½ feet each, solid on the underside, and containing 18 tapering sockets: a perfectly even and solid bed to be prepared for receiving the castings, and the tapering interstices between the blocks, from the edges of the sockets upwards, to be filled with gravel or broken stones, in order to wedge and firmly confine the blocks, and prevent their being shaken or displaced by the carriage-wheels rolling over them. The advantages offered by this scheme were compactness, non-liability to derangement, ease of removal for alterations in pipes or sewerage, corresponding rapidity of replacement, comparatively little wear and tear, therefore little mud in wet or dust in dry weather, deadening of the noise, &c. Mr. Finlayson recommended larch fir as the least liable to decay, and being tough and difficult to be split or torn asunder. He had tried the system in a pavement on the farm premises, in juxtaposition with granite paving, using wooden planks as a bottom, and after twenty-five years the granite had undergone more wear than the wood; while some blocks of the latter, taken up, proved to be as fresh as the day they were laid. Two great causes of failure in pavements are the defective nature of the bed, and the materials being laid with their narrow side downwards.

ST. STEPHEN'S, WALBROOK.—We are requested to mention that the actual cost of the stained glass in the east window was 350*l*. Further, that the gentleman alluded to in our last as being the architect engaged on the painted window is Mr. Joseph Gwilt, of Abingdon-street.

THE STRIKES AND DIFFERENCES IN THE IRON TRADES.—The nailors and chain-makers about Bromsgrove and Cradley, Stourbridge, Sedgley, Rowley Regis, &c. have been out on strike in consequence of recent reductions of wages to a very low standard. The strikers are said to have conducted themselves with propriety since the occurrence of the strike. The masters, it is said, have agreed to restore their wages to the standard required by the men.——The *Manchester Guardian* states that, up to Monday week, the number of men who had resumed work in the shops of the members of the Association of Employers in Lancashire, so far as concerns 24 firms who had made returns, was as follows:—

Millwrights, fitters, turners, planers, and machine-men	976
Smiths, boiler-makers, &c.	354
Moulders	297
Others, including labourers	1149
Total	2776

BELL-TURRET, CORSTON CHURCH, WILTS.



BELL TURRETS.

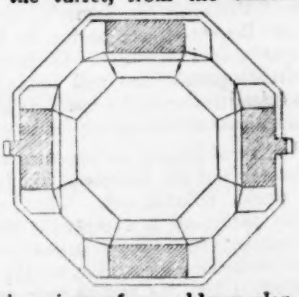
CORSTON CHURCH, NEAR MALMSBURY.

It appears to me somewhat surprising that amongst the numerous publications on "English Church Architecture," so little attention should be paid to that interesting class of churches possessing *bell turrets, which, resting "on a single wall, present the appearance, on a small scale, of steeples whose substructure affects the ground plan of the building,"** the extreme rarity and peculiarity of which, saying nothing about their beauty of outline (which is unquestionably superior to that of the bell-*gable*), ought to have been a sufficient guarantee for their study and elucidation. With a view of assisting in rendering the subject more familiar, and of promoting, through the medium of your journal, the adaptation of this class of turrets to modern buildings, I forward you the following account, accompanied by a view † of the west end of the little church of Corston, near Malmsbury, the bell-turret of which, though differing widely from the majority, has, nevertheless, the principles of construction common to all.

Corston Church is of one date and style, if we except modern innovations, and may be considered to belong to the latter part of the fifteenth century. It consists of a nave and chancel, with south porch, and is prettily situated on a rising ground embossomed in rich and umbrageous foliage. The interior—alas! for that "puritanical zeal,"

> "——— which o'erthrew
> In town and city and sequestered glen,
> Altar and cross and church of solemn roof,"

is devoid of all that "dim," religious, and devotional character so peculiar to the house of prayer. Where *once* "admonitory texts inscribed the walls," the pomps of petty temporalities are displayed in "mural tablets." "The footworn epitaphs and shining effigies of brass inlaid" are gone, and the floor that once was occupied by oaken benches ranged in seemly rows, is now covered, through the good taste and feeling of the parochial authorities, with "pews" of beautiful white deal, erected by and under the superintendence of Mr. Churchwarden Carpenter, in a plain unostentatious manner, with doors, of course. But to the church. The exterior, or rather the west end—for, like the interior, the eastern part, windows, and porch have been "done up,"—is what more immediately demands our attention. The west wall, which supports the bell turret (it may be as well to remark here that the church is entirely without buttresses) is pierced by a two-light window (the head of which is of the usual plain Perpendicular character), surmounted by a hood mold, from the apex of which springs the corbel that supports the west arm of the cross, forming the lower plan of the turret, from the extremities of

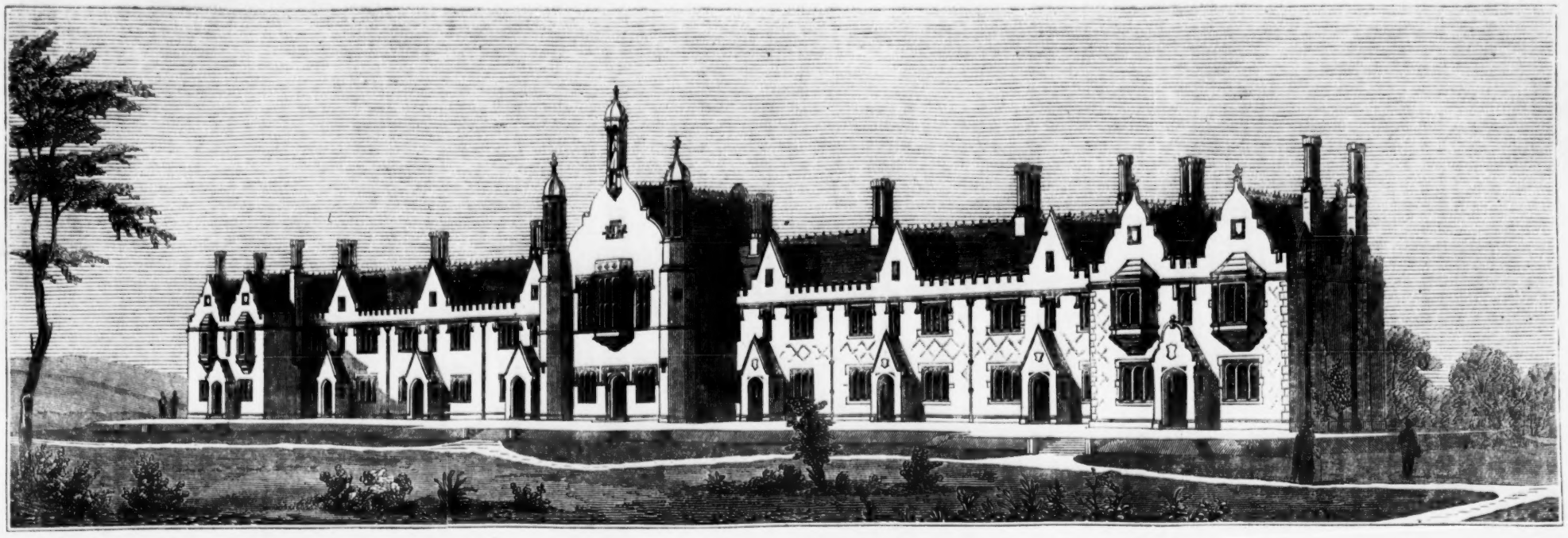


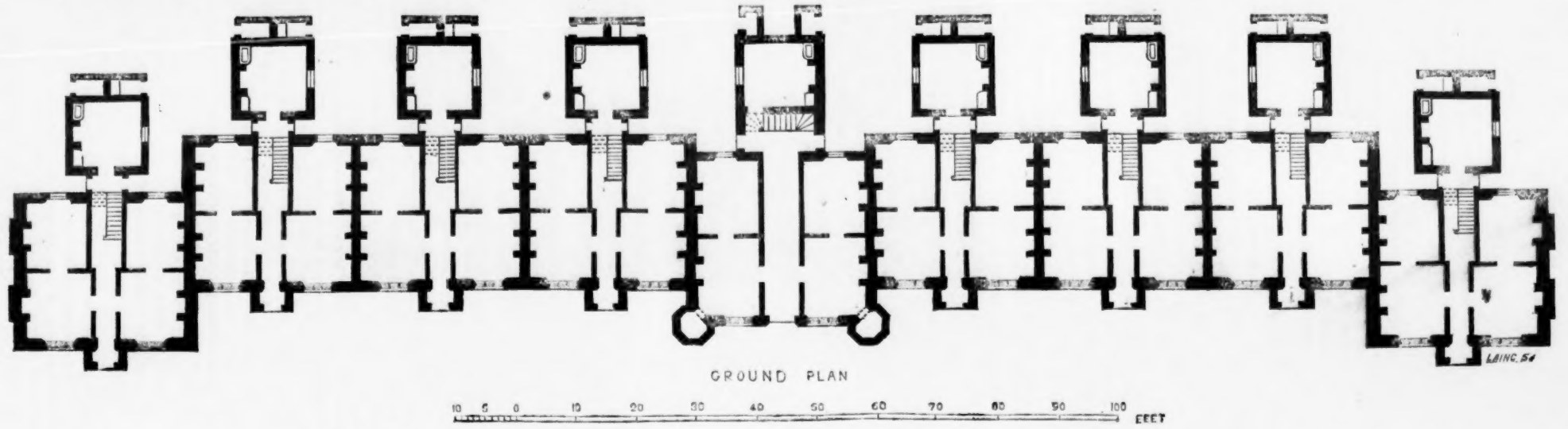
which rise piers of an oblong plan, to the height of 4 feet, and then enlarge so as to form the cardinal sides of an octagon, by means of concave brackets, which continue (*straight*) along either end of the diagonal faces. Above this the octagon appears perfect in the elegant little battlemented parapet, from the inside of which rises the spire, ribbed and surmounted by a beautifully carved finial. The north and south sides of the turret are enriched with buttresses, and the interior is divided into two compartments by a partition, running east and west, thereby giving it the appearance of strength, as well as adding to its durability.

E. W. G.

* See Rev. J. L. Petit's interesting paper in vol. i. of the *Architectural Journal*.

† "The perspective" is drawn by *rule*, the place of sight being about 66 feet from the nearest angle.





ASYLUM FOR WORTHY AGED AND DECAYED FREEMASONS.—MR. DAUKES, ARCHITECT.

ASYLUM FOR WORTHY FREEMASONS AT CROYDON.

THE new Asylum for aged and decayed Freemasons is situated in the parish of Croydon, near the South-Eastern Railway, upon a gravelly soil, well drained, and elevated 3 feet above the natural level of the ground. It has a southern aspect, and is surrounded by a terrace and extensive pleasure-grounds.

The building has been erected by subscription, from the design of Mr. S. M. Daukes, architect. It is capable of affording accommodation to thirty-six inmates, allowing two rooms to each, with other suitable domestic conveniences. The contract for the entire building was taken by Messrs. Patrick and Son, builders, Belvidere-road, Lambeth, for the sum of 4,868*l.* At present, however (for want of funds), only the north wing and centre building are completed; and these have cost, owing to considerable additions in the way of ornamental decorations, 3,731*l.* 10s. 7d.; the principal additional expense has been incurred in consequence of its having been considered desirable to add considerably to the height of the foundations, with a view to render the building perfectly free from damp. Immediately over the bay-window of the centre building is placed a bronze tablet to the memory of its founder, Dr. Crucefix, whose portrait is also suspended in the hall of the building. The bay-window above referred to is beautifully glazed with stained glass at the expense of the building committee, who deserve especial commendation for this act of liberality, and whose cyphers are emblazoned in its different compartments.

The style which has been selected is the late Tudor, and the material employed red brick with blue headers and stone dressings. The roofs are covered with tiles laid in an ornamental pattern.

The consecration of the building was celebrated with great masonic pomp and display on the 1st of August, 1850, by the right worshipful brother A. Dobie, provincial Grand Master for Surrey, assisted by nearly 700 members of the order.

The sum of 2,200*l.* is required to complete the building: of this there is invested, in the names of the building committee, 600*l.* and a legacy of 500*l.* to the same object has recently been left by the late Mr. Colville Brown, of Norfolk. A further sum of 1,100*l.* still remains to be collected, and which, amongst so numerous and wealthy a body as the Freemasons, we doubt not will soon be obtained.

A GRAVE QUESTION, IN WHICH DOCTORS DIFFER.

DOES LEAD POISON WITH HARD WATER, OR WITH SOFT, OR WITH BOTH?

HAVING now (see pp. 54, 55) presented a fair view of the evidence, which, as far as its mixed nature permitted, seems to corroborate and support, or militate more or less in favour of that of Dr. Lyon Playfair, all of whose experiments at the Museum of Practical Geology on water supply are reported to have tended to "prove that perfectly soft water has no action on lead, and that all the solid (hardening) ingredients of water tend to produce and increase the action of lead," we must now review what has been said and done towards the establishment of a conclusion practically the very reverse, or nearly so. And as we have given the place of precedence and honour to the evidence which we regarded as the most influential in favour of the perfect safety of soft water with lead pipes and cisterns, and the imminent danger of hardening ingredients or hard water in similar circumstances; so, we shall now first of all proceed to adduce the evidence which we regard as the most influential in favour of the opposite conclusion, which was *established* (as it was thought) on an extended series of experiments, also purposely gone into in order to decide this important question.

Professor Christison, indeed, appears to have given this subject a much more extended and formal consideration than any chemist or toxicologist who preceded him, if not, indeed, also, than any who has even yet treated of it. In fact, subsequent authorities appear to have chiefly fallen back upon his experiments, the results of which they have in general adopted. And, moreover, it is Christison's opinion that the subject is one which, so far from being exhausted, still demands further careful investigation, in some of its many important aspects not yet treated of.

All that we need here remark as to inquiries previous to those of Christison, is, that although the ancients were well acquainted with the dangerous properties of leaden vessels or utensils, Vitruvius having published (De Architectura, lib. viii. c. 7) a very strong remonstrance against leaden pipes when used for the conveyance of water, and Galen having cautioned his readers continually not to use water that had flowed through pipes of this metal, nevertheless we find nothing but repetitions of these cautions till the end of the last and beginning of the present century; and even in 1823, Paris, though he fully recognised the risk of using lead in water supply, said very little on the subject. Dr. Lambe, of Warwick, however, had first minutely, but not quite correctly, examined it. Guyton Morveau contradicted some of his conclusions; and a few years later (1816), Dr. Thomson, of Glasgow, also treated of it, supporting Dr. Lambe's proposition, that "most spring waters attack lead."

In 1829, Professor Christison first published an extended account of his investigations into the whole subject of the action of different waters on lead. Other authorities followed; but although Christison has since more than once recurred to the question, and drawn pointed attention to its practical importance, and its details, we find even recent writers of note still passing it over with little or no attention. Thus, in 1843, Professor Orfila treats of it in a few lines only, and even these, as Christison alleges, contain several inaccurate statements. Still more recently, we have searched in vain for even a single hint or allusion to it, either in text or note, in Turner's Chemistry, edited by Liebig. Graham appears to say nothing about it. Brande does recognise its importance, as we shall afterwards see; but he not only coincides with Christison in the main, but refers his readers to him for "a good epitome of all that relates to the action of water on lead."

It thus appears that Christison, whether he be right or wrong, is fully entitled to be regarded as the most influential antagonist to Playfair on this *vital* question, which, moreover, it also thus appears, may be said to be only now in course of consideration and discussion as a moot question by no means exhausted,—scarcely even as yet taken up,—by chemical authorities in general. As for the public at large, whom it so deeply interests, we believe that they knew nothing about it, till we called their attention to it in THE BUILDER, since which time the noxious influence of lead in certain cases which have come before them in the daily papers has been fully recognised.

The evidence of Professor Christison, on which the whole subject, as well as its public recognition, may be said to be mainly based, in every sense, therefore, merits serious consideration—in connection with Dr. Lyon Playfair's contradictory evidence, and with the corroborations of that evidence already adduced.

Of the mutual influence of soft water and lead, then, Professor Christison, in his Treatise on Poisons (ed. 1845, p. 517), says—

"Distilled water, deprived of its gases by ebullition, and excluded from contact with the air, has no action whatever on lead. If the water contains the *customary gases* in solution the surface of the metal freshly polished becomes quite dull and white. But if the surface of the water be not at the same time exposed to the air the action soon comes to a close. When the air, on the other hand, is allowed free access to the water, a white powder appears in a few minutes on and around the lead, and this goes on increasing till, in the course of a few days, there is formed a large quantity of white matter, which partly floats in the water or adheres to the lead, but is chiefly deposited on the bottom of the vessel. If this experiment be made with atmospheric air deprived of carbonic acid, the white substance puts on the form of a fine powder, which I find to be a hydrated oxide, * * * but if the surface of the water be exposed to the open air, the substance formed consists of minute brilliant pearly scales * * * a carbonate of lead. * * * The formation of carbonate takes place with considerable rapidity. In 12 ounces of distilled water, contained in a shallow glass bason, *loosely covered to exclude the dust*, 12 brightly polished lead rods, weighing 340 grains, will lose 2¼ grains in 8 days, and the lead will then show evident marks of corrosion. The process of corrosion goes on so long as atmospheric air is allowed to play freely on the surface of the water. In 20 months I have obtained 120 grains from 1 ounce of lead rods kept in 24 ounces of distilled water. * * * It will be inferred from the preceding facts that distilled water for economical use should never be preserved in leaden vessels or otherwise in contact with lead."

Distilled water is, in fact, just water perfectly soft, and the evidence here, therefore, is to the effect that perfectly soft water, in ordinary circumstances, acts immediately and powerfully on lead. Rain-water, moreover, is distilled water, and wherever rain falls therefore and forms streams and springs, it necessarily remains perfectly soft water, unless or until it becomes impregnated with the salts which, as we shall shortly show, are alleged by Christison to preserve or *protect* the water from the influence of lead, instead of *exposing* it to that influence, as evidenced by Playfair. That many spring-waters *are* exceedingly soft, and that many such waters do act on lead, we have already seen asserted. One such case adduced by Christison we may here quote, from an abstract of it already given in THE BUILDER:—

"Perhaps one of the most remarkable of those conclusions to which recent chemical authorities have come is this, that the purest of all water, even were it distilled, is the most likely to act on lead, and thus become contaminated with poisonous matter. In one sense, indeed, this conclusion is not new, or rather some of the facts on which it has been based are of old enough date. At Tunbridge, for instance, in 1814, a plumber, who undertook to supply the town with water, forthwith accordingly laid a line of leaden pipes for a quarter of a mile,—redeemed his contract sure enough,—but nearly poisoned a number of the people, many of whom were seized with lead colic, while one great water-drinker in particular, a lady, lost the use of her limbs for months, until, a natural alarm arising, iron pipes were substituted, and the evil ceased. Mr. Brande, the chemist, found lead in the water which had passed through the pipes, but none at the fountain head; and Dr. Thomson examined the latter, and found it *exceedingly pure*."

Our intention at present, however, is to confine ourselves to the evidence or conclusions of chemists based partly on such cases, and not to enter into any detail of the cases themselves.

As the question is a mixed one, and generally treated as such, in its relation to hard water as well as to soft, in one and the same evidence, as already seen, we shall follow up what Dr. Christison says as to soft water, with his views on the subject of hard water, and with the general results to which he has been led in reference to both.

At page 519 he thus treats "of the action of solutions of neutral salts on lead:"—

"The property which pure aërated water possesses of corroding lead is variously affected by foreign ingredients, which it may hold in solution.

Of these modifying substances none are more remarkable in their action than *the neutral salts, which all impair the corrosive power of water.* Important practical consequences flow from that action; for *it involves no less than the possibility of employing lead for most of the economical purposes to which the ingenuity of man has applied that useful metal.* * * * The preservative power depends on the acid, not on the base of the salt. * * * The general result of these experiments (just before given) appears to be, that neutral salts in various and for the most part minute proportions, retard or prevent the corrosive action of water on lead, allowing the carbonate to deposit itself slowly, and to adhere with such firmness to the lead as not to be afterwards removable by moderate agitation, adding subsequently to this crust other insoluble salts of lead, the acids of which are derived from the neutral salts in solution, and thus at length forming a permanent impermeable screen, through which the action of the water cannot any longer be carried on."

A little farther on he says:—

"Many instances might be quoted of spring

waters, which act with inconvenient or dangerous rapidity on lead. * * * Dr. Lambe was led by his researches to imagine that no spring water whatever was destitute of this property in a dangerous degree. This wide conclusion is not supported by valid facts. Yet his work contains several accurate and instructive examples of the action in question."

He thus (p. 534) sums up the whole inquiry :—

"The general results of the preceding inquiries are, that rain or snow water for culinary use should not be collected from leaden roofs, nor preserved or conveyed in lead;—that the same rule applies to spring waters of unusual purity, where, for example, the saline impregnation does not exceed a 15,000th of the water;—that spring water which contains a 10,000th or 12,000th of salts may safely be conveyed in lead pipes, if the salts in the water be chiefly carbonates and sulphates;—that lead pipes cannot be safely used, even where the water contains a 4,000th of saline matter, if this consist chiefly of muriates;—that spring water, even though it contain a large proportion of salts, should not be kept for a long period in contact with lead;—and that cisterns should not be covered with lids of this metal."

In support of Christison's conclusion that perfectly soft water acts strongly on lead, *unless* "deprived of its gases by ebullition and excluded from contact with the air," we may first of all adduce the few remarks on this subject made by Dr. Paris in his "Treatise on Medical Jurisprudence," published in 1823. In vol. ii. page 337, of this work, it is said,—

"Pure water, provided the air be excluded, does not appear to exert any sensible action upon lead, but the combined influence of these agents converts the lead into a carbonate—a fact at once exemplified by the white line which is so constantly visible at the surface of the water preserved in leaden vessels. So well acquainted were the ancients with this fact, that we find frequent allusions in their works to the dangerous property of leaden utensils."

Professor Solly is said to have "showed," at the Royal Institution in 1847 (*vide* THE BUILDER for that year, page 235),—

"That unless water contains from one 8,000th to one 4,000th of its weight of earthy salts—such as sulphate of lime—it ought never to be taken internally if kept in leaden cisterns, these *earthy salts protecting the lead from the action of the water.*"

Dr. Fownes, in his book on chemistry, published in 1844, states that—

"When clean metallic lead is put into pure (soft) water, *and exposed to the atmosphere*, a white, crystalline, scaly powder begins to show itself in a few hours, and very rapidly increases in quantity. This substance is due to the action of the carbonic acid dissolved in the water: it consists of carbonate in combination with hydrate. When common river or spring water is substituted for the pure liquid, its effect is scarcely observable, the little sulphate almost invariably present [query, at Tunbridge] causing the deposition of a very thin but closely adherent film of sulphate of lead upon the surface of the metal, which protects it from further action. It is on this account that leaden cisterns are used with impunity, at least in most cases, for holding water. *If the latter were pure, it would be speedily contaminated with lead, and the cistern be soon destroyed.*"

As to the "impunity" here alleged, we fear that this cannot as yet be safely taken for granted in any view of the apparently conflicting evidence on this moot question; and to show that it ought not to be so, we may here, parenthetically, refer our readers to the opinion of Dr. T. Thomson, already given in THE BUILDER.*

As to this same "impunity," of which Dr. Fownes assures us, Mr. H. Osborn, a practical chemist, and a correspondent of our own, already quoted, judiciously remarks,—†

"It is an erroneous opinion that lead has been used for centuries without causing any deleterious impregnation of water. I would ask if necessary investigations have been made in all parts of the country? and if the origin of every disease has been discovered? How many have fallen an early sacrifice, after a long and painful illness, without the cause having been known?"

We are by no means desirous of exciting alarm for which there may be little immediate or general occasion; but when a sense of fairness impels us to give evidence which we at same time deem somewhat rash, and assurances of safety which we think there is but too much reason to fear the circumstances do not warrant, we also feel it incumbent on us to check the probable consequences of such evidence and assurance, by counterbalancing them, so far, with a glimpse of the opposite side of the question. Let us now proceed, however, with the evidence more particularly corroborative of Professor Christison's conclusions.

Dr. Brande, in his standard work on chemistry (p. 833), says, on the whole question of the action of water, soft and hard, on lead,—

"In distilled water free from air and in close vessels a clean surface of lead remains bright; but under the same circumstances *in open vessels* it soon tarnishes: small crystalline scales of oxide of lead are formed, a portion of which dissolves in the water, and is again slowly precipitated in the form of carbonate. In this case the oxygen is imparted by the air held in solution in the water. The film of oxide thus formed is soluble to a small extent in the pure water, and is thrown down in proportion as it passes into the state of carbonate. A very minute trace of sulphuric acid, or of a soluble sulphate in the water, entirely prevents this corrosive effect, and hence it is that common spring water is kept with considerable impunity in leaden cisterns, which, however, should have wooden and not leaden covers. In the latter case the vapour of the water below condenses upon the cover, and often tends to its rapid corrosion, it being, in fact, distilled water, and not therefore prevented in its action by any saline matters; so that, *when water is to be kept in this way, as it generally is, for domestic use, its qualities should be cautiously inquired and examined into, as very deleterious effects have occasionally arisen from the solution of the oxide.* Another source of contamination by lead may arise from electric action, as where iron or copper bars, screws, or pipes, are in contact with or soldered into lead; and in these cases, owing to the action of alkaline bases, as well as of acids upon the lead, danger may occur when it is thrown into an electro-negative as well as electro-positive state. The means of detecting lead are fortunately simple and delicate. . . . A good epitome of all that relates to the action of water on lead will be found in 'Christison's Treatise on Poisons.'"

The evidence given before the General Board of Health, although some of it has been shown to corroborate Dr. Playfair's conclusions, appears to have led the reporter of that evidence on the whole to coincide so far with Dr. Christison's views.

"In the evidence of witnesses connected with the present hard-water supplies, we find strong allegations of the danger of the introduction of pure water, from its powerful action on lead. There can be *no doubt of the more powerful action of soft water upon lead under given circumstances*; which circumstances, however, we find from experience on a large scale seldom or never occur under a proper system of distribution. Some fatal accidents have been occasioned by the fall of leaves in leaden gutters and cisterns, the infusion of which appears to have caused powerful decomposition.* The use of lead piping and lead cisterns has long been objected to, and the remedy would be the disuse of that metal. Iron piping is altogether better and cheaper than lead, and may now, it appears, at no great additional expense, be protected from oxidation by an earthenware glaze."

With reference to this last recommendation, it may be here remarked, that the water of Edinburgh, according to Dr. Christison, always yielded a trace of lead, until iron pipes were substituted for leaden ones.

The following remark in the Board's report implies that soft water is dangerous in lead, even with a constant supply, and hence, with less exposure of the lead to air than when the supply is intermittent :—

"Though we have been informed of no serious accidents from contamination with lead in any of the towns where new supplies of soft water have been introduced, we believe that minor injuries [slower deaths?] from such partial contaminations as Professor Clarke describes, *may occur and pass unnoticed*; and that for this reason, the use of lead pipes should be discontinued as early as practicable. As a question of danger, however, a preponderance of testimony establishes the conclusion that hard water, with an intermittent supply, is actually *more* dangerous than soft water with a constant supply."

That intermittency of supply has something notably to do with the apparent discrepancies and contradictions in the evidence on this important question, we are strongly persuaded; but at all events the sooner those to whose evidence the public chiefly look for a settlement of the question come to a mutual understanding on the subject the better, and our sole purpose in entering thus at some length into the apparently conflicting evidence, so far as it has already been gone into and recorded, is to enforce the necessity, as far as possible, of such an understanding, and to hasten its advent.

THE BUILDERS' BALL.

THE ball in aid of the funds of the Builders' Benevolent Institution took place on the 19th inst. at Willis's Rooms, St. James's, and passed off most agreeably and successfully. There were more than 600 persons present, and amongst its more prominent supporters we may mention, Mr. Alderman Cubitt, M.P. Mr. Lewis Cubitt, Messrs. George Locke, Thomas Nesham, J. Jay, Henry Johnson, H. Jackson, Stephen Bird, George Bird, the treasurer; Joseph Bird, the honorary secretary; Peter Pearse, J. Guerrier, J. Lambert, and other influential members of the building trade.

One of the officers of the charity, who, in his most praiseworthy zeal in its behalf, thinks we can never say enough about the Institution he worthily represents, and that we have nothing else to do but write paragraphs in its praise, calls upon us in earnest terms to give "a glowing description of the ball and its beauties." Whom would he have us single out for "description?" that joyous little damsel there in whose hair the "sunbeams have got entangled?"—the tall damsel in pink who looks too dignified to be merry, and is standing just now by the alderman?—or that more vivacious face, still, however, showing a trace of recent illness, which is closer to him in more ways than one? We cannot do it—it is not in our way. We cannot set forth how Adams's band pleased all the daughters of Eve, that the master of ceremonies played his peculiar part well, and that the comestibles were ample for those who indulge in the very vulgar habit of eating. Suffice it for us to say that the whole affair was managed very well, and that the committee will probably realise 150*l.* in aid of the praiseworthy purposes of the institution. Terpsichore never moves more gracefully than when she takes steps to aid the Charities.

NOTES IN THE PROVINCES.

Cambridge.—A portion of Trinity Hall, comprising twenty-five rooms, was destroyed by fire on Friday last.

Norwich.—The statue of Nelson by Mr. Milnes, the sculptor of the Duke of Wellington's statue at the Tower of London, has been sent to Norwich. The figure is 9 feet in height, and clothed in uniform, with a cloak like a toga. Its *locus in quo* has yet to be decided on, and even the price has not been either fixed or subscribed beyond barely 400*l.* already collected.

Yarmouth.—The girders and other parts forming the new bridge are now completed in London. The abutments are finished on each side the river. One of the coffer-dams is in course of construction for one of the piers. The depth of the river is 24 feet at low water, and the foundations must be laid 6 or 8 feet below the present bed, which is all loose sand. —*Norfolk Chronicle.*

Leamington.—The contract for the cast-iron pipes for Leamington water-works has been

* *Vide* volume for 1849, page 22.
† THE BUILDER, vol. v. page 438.

* Where spring waters, therefore, pass through peaty soils, and become impregnated with peat, it becomes a serious question how far lead pipes and cisterns are consistent with safety in the use of such water, even though soft water were indisputably proved to be otherwise safer than hard. As to the fact of vegetable impregnations rendering water dangerous in use after contact with lead, the case of Amsterdam may be instanced. The noted colic of Amsterdam is said by Tronchin, who wrote a history of the epidemic, to have been occasioned by leaves falling and putrifying in leaden cisterns filled with rain-water. Indeed, the water of Amsterdam had been collected from roofs during rain, and the colic appeared soon after the substitution of lead for tiles on the roofs, when it broke out with violence, and committed great ravages.

obtained by Mr. J. Haywood, of Derby. Mr. Haywood made the whole of the pipes for the Derby water-works.

Hitchin.—A design for the projected Corn Exchange, by Mr. William Beck, has been adopted. The proposed building is an oblong square, of very light construction: the roof and three sides are to be wood and glass. The works will be carried out by a company recently formed for the improvement of Hitchin market. The site chosen is near the centre of the north-west side of the present market-place.

Winchester.—The east window of Winchester Cathedral is about to be restored as nearly as possible to the original design by Messrs. Baillie, at the joint expense of the Dean, the Warden, and Fellows of the College, Oxford. St. Cross Hospital is about to undergo an extensive repair.

Buckland (Dover).—The old church of St. Andrew's, Buckland, near Dover, has been repaired and enlarged. The high pews have been replaced by open benches. A painted window has been promised as a gift.

Dorchester.—The restoration of the Abbey Church will shortly be resumed. Plans have been obtained from Mr. Butterfield for restoring the screen, and substituting new oak seats throughout the church, in place of the present pews. They are already in hand for execution.

Worcester.—In December last the average daily attendance of pupils at the Worcester School of Design was 102. The committee have determined, it is said, to set apart 30*l.* to be distributed in prizes amongst the students at the annual meeting, which will be held in October.

Aberdare.—A new church is in course of erection here. The style of the building is the simple Decorated. The spire will rise to the height of 170 feet from the base of the tower. There are 500 free sittings.

Liverpool.—The free public library, at the Union News-room, in Duke-street, is now nearly ready for the reception of the public. The shelves are fitted up to hold about 10,000 volumes, with about which number of books the library will commence. The lower room has capacity for seating about fifty readers comfortably. Two pictures presented to the institution have been hung up. One is a large painting, said to be by Tintoretti, of the reconciliation of Esau and Jacob. The other has been put in a frame which cost 20*l.*: it represents the Crucifixion. The painter is unknown, but the style appears to be that of Rubens.

Preston.—St. James's Chapel has been so undermined, it appears, by coal workings, that Mr. H. P. Horner, of Liverpool, architect, has advised its abandonment as an irremediable ruin.

Glasgow.—The recent improvements in the Glasgow Waterworks being now completed, the present supply is said to be no less than ten millions of gallons daily; and in a short time can be increased to an almost unlimited extent.

Broughty Ferry (Dundee).—Since the formation of the railway between Dundee and its appendage, Broughty Ferry, a number of years since, the latter is said to have immensely increased. From a mere fishing village, it is now an extensive suburban district, containing the private residences of most of the Dundee manufacturers, merchants, and others of the higher classes connected with the town. The floating railway-bridge across the Firth of Tay also adds to its importance.

Glamorganshire.—A church is proposed to be erected at Maesteg, in the parish of Llangynwyd, where, within the last twenty years, a very large population has been drawn together by the establishment of collieries and iron works, and from the flourishing state of the published subscription list, there is a fair prospect of its being soon carried into effect.

SALE IN THE EXHIBITION BUILDING.—The sale of materials and fittings in the Exhibition Building, Hyde Park, by Mr. Lerew, will commence on the 2nd March, and be continued during the whole week. The catalogue contains 1,950 lots.

Miscellanea.

ARCHITECTURAL INSTITUTE OF SCOTLAND.—The second meeting for the season of the Glasgow branch of this institute was held on Thursday, the 19th. Papers were read by Mr. T. Rochead, architect, and Mr. D. Smith; the former on the keep-towers of feudal times, and the latter on opening up the more densely-built parts of Glasgow. Mr. Rochead, in his paper, which he illustrated by drawings, gave a brief narrative of his visit to a few of the more remarkable baronial strongholds still in existence, though in ruins. He visited, among others, the Castle of Borthwick, in East Lothian, and Blarney Castle, in Cork, Ireland, both of which he described.

THE IRON TRADE.—Prices have been sustained with difficulty, owing to the reduction, varying from 2s. 6d. to 10s. per ton, that has very generally been submitted to in common sorts, while even upon those terms the demand has been limited. In Scotch pig iron a reduction of make to a serious extent is said to have been begun. In Wales a large first-rate establishment, with machinery admirably arranged upon the newest and most approved principles, has lately been parted with, for the sole consideration of undertaking its liabilities. —*Birmingham Gazette.*

BRITISH ARCHÆOLOGICAL ASSOCIATION.—At a meeting on the 25th inst. Mr. S. R. Solly, V.P. who was in the chair, exhibited a magnificent Roman glass urn or jar, discovered in the churchyard of St. Stephen's, near St. Alban's; also a small terra-cotta Roman lamp, and some other articles found on the same spot 70 feet deep in the ground. Mr. Davies exhibited a number of coins, struck at Oxford during the civil wars; a silver-gilt medallion portrait of Charles I.; and a small and beautifully enamelled miniature of the same monarch, having on the back C. R. surmounted by a crown, and inclosed within laurel branches. Mr. Latham exhibited a silver penny of the reign of Elizabeth. Mr. Gunston exhibited several pilgrim's signs. Mr. Syer Cuming exhibited a curious cauldron rack, or trammel of iron, elaborately ornamented, and of the date of the seventeenth century. It had been brought from a castle in the county of Kerry, formerly belonging to the Desmond family. Mr. Cuming accompanied this exhibition with a brief notice of the various inventions for facilitating their culinary operations, attributed to the South Sea Islanders, the Kamschatdales, the Celtic colonists of Ancient Britain, the Romans, Saxons, and Normans; and some singular superstitions attaching to them, illustrating his remarks by a series of drawings from original specimens and illuminated MSS. Mr. Yewd communicated to the association some observations on the site of the conduit built by Wm. Lamb, and giving its name to Lamb's Conduit-street. The treasurer announced that the annual general meeting for the election of officers and council would take place on Wednesday, March 10, at four o'clock p.m. The next public meeting will be on Wednesday, March 24.

ITALIAN MARBLES.—We observe in our advertising columns an announcement of an extensive sale of Italian marble by auction, on 3rd prox. at Thames Bank, Pimlico, by Mr. Thompson, which appears to merit the attention of the building-trades generally, and to offer inducements towards decoration that may claim attention.

THE FITZCLARENCE TESTIMONIAL.—The committee of subscribers to the proposed testimonial at Portsmouth, taking our hint to avoid the perpetration of farther offences against good taste, such as those exhibited in the statues on Southsea Common, advertised for designs, and have selected one by Mr. Truefitt, which consists of a pillar in the Gothic style, with ornamental head, and four correspondent lamps midway above a square base, with five steps rising in a pyramidal form. The height of the shaft to the gilt vane is 33 feet; the diameter 3 feet; the base 12 feet square. The shaft and cap are octagonal. A suitable railing will probably be erected round the outer step of the base, with corner posts for lamps.

THE SECURITY OF EXISTING RESERVOIRS.—A subscriber suggests that, as it is a known fact that the greatest pressure of a fluid is at one-third from the bottom in any large reservoir or cistern, &c. iron tie-rods should be inserted or crossed through the reservoir at one-third from the bottom, and carried through the walls, and bolted. It unfortunately happens, however, that no brick or stone-work, such as our correspondent seems to take for granted, exists in many reservoirs at all, large numbers of them being mainly made up of earth-work or mud and clay.——Besides the Holmfirth catastrophe, two other reservoirs burst during the late floods, both of them near Edenfield. The valley at that part has a rapid descent, and the rush of water was tremendous. The flood first swept away a flagstone rubbing mill, at New Gate, taking with it many gravestones with inscriptions engraven thereon: it then crossed the Rochdale and Edenfield road, doing some damage; and next burst over the Bury and Haslingden road, where it did considerable mischief.

CREDITON: MUSICAL HALL COMPETITION.—A design by Mr. R. D. Gould, architect, has been selected for the intended new Music Hall and Literary and Scientific Institution, at Crediton. A correspondent asks whether it can possibly be true, as stated in a local paper, that there were seventy competitors, "comprising architects of celebrity from London and elsewhere," for this 10*l.* prize.

SCHOOLS OF DESIGN.—A new department of the Board of Trade, called "The Department of Practical Art," has been created. Mr. Henry Cole is to be superintendent of the general management, and Mr. Richard Redgrave art-superintendent. Mr. Cole's duty will be to communicate with manufacturers, local committees, managers of institutes, &c. to visit and inspect the schools, &c. assisted by Government, and report as to these and the establishment of new schools, regulate the admission of students into the head school, and other duties, all to be exercised, of course, under the sanction of the Board. Mr. Deverell remains as secretary.

GOTHIC FURNITURE.—The *Art-Journal* for the current month contains a valuable assemblage of drawings of mediæval furniture by Professor Heideloff, of Nuremberg. Amongst them is a canopied chair, with reading-desk made in 1456, a clock-case from a design of the fifteenth century, a quaint corner cupboard, and some tables.

NEW PLANING MACHINE.—An invention of Mr. W. H. Burnett for planing deals, mouldings, &c. was tried to-day before Rear-Admiral Superintendent Prescott, C.B. and the engineering officers of this dockyard, in the joiners' shop. It planes 80 feet per minute by steam power. The trial was pronounced successful.—*Portsmouth Times.*

A NEW CAB.—A "Brougham Cab" has been registered, to carry four inside, and run at same draught as the Hansom cab. The body of the vehicle is oval, and the seat semi-circular and stretching both behind and before the axle. There is a frame below on which to carry luggage, which is secured by a leathern strap. The driver's seat occupies the same place behind as in the Hansom cab.

AN EXTRAORDINARY PLANK has just come from Van Diemen's Land: it is harder than East-India teak, measures 140 feet in length, 20 inches in breadth, and 6 inches thick—without a knot on the surface. This specimen of colonial produce was intended for the Exhibition, but a variety of causes prevented its being forwarded in time.

SUBURBAN ARTIZAN SCHOOLS.—It will be seen that the committee are taking measures to establish schools at Islington, Paddington, Knightsbridge, and Lambeth. We fully appreciate the desire of the Society of Arts to aid in this movement, but they really ought to leave to those who originated it their London domain. The country is wide enough for them, and offers ample employment. The present school is very successful (having now 136 students), and the original committee have a moral claim to a precedence of London from their priority, success, and title.

TENDERS

For the erection of a New Temperance Hall at Derby, according to the design of Mr. Stevens, architect. The quantities were furnished by Mr. Wale.

Edwin Thompson, Derby	£2,344 0 0
Lilleys, Measham	2,253 0 0
Winterton and Dusantoy, Derby	2,150 0 0
George Thompson, Derby	2,150 0 0
Charles Moody, Derby	2,124 0 0
Freeman, Belper	1,953 0 0
Humphries and Bradbury, Derby	1,679 0 0

The last sent a letter after the tenders were opened, stating they had made an error of 90*l.* and unless that amount was allowed in addition to their tender they must withdraw it.

For taking down premises in Winetavern-street, and erecting in their stead stables for twenty-nine horses, with hay-lofts over, cart-sheds and stores (92 feet long by 42 feet wide, two stories), cart-sheds, yards, and urinals, together with a dwelling-house in front, comprising basement, parlour, and bed-room stories for the overseer. These buildings are for the Corporation of Dublin, and the plans, &c. were made out by the borough engineer, Mr. Neville.

	For main buildings.	Extra for additional story on overseer's house.
Butler and Baker	£2,400 0 0	£130 0 0
J. and L. Barker	2,350 0 0	120 0 0
Whilan	2,150 0 0	125 0 0
B. Mayers	2,150 0 0	125 0 0
Hogan	2,130 0 0	120 0 0
Crowe	1,950 0 0	77 0 0
J. Nolan	1,895 0 0	80 0 0
S. Roberts (accepted)	1,850 0 0	125 0 0
Tough	1,570 0 0	90 0 0
Meade	1,534 0 0	

TO CORRESPONDENTS.

"T. O. J." (we cannot conveniently go into particulars. Such charges are usually by special arrangement), "G. C." (we do not care to meddle with fire-arms, though we keep a "Colt" within reach for fear of those whom we are obliged occasionally to affront), "W. G." "W. W." "T. M." "An Architect," "R. T. J." "H. C." "Q. in the corner" (declined with thanks), "W. R." (ditto), "B. B." (ditto), "G. G." "W. C." "R. W. A." (send particulars Drawing will have to be improved), "P. de T." (*quantum suff.* Thanks), "W. D." "H. M." "J. W." "T. S. G." "J. N. W." "T. T." "C. O." "G. S." (covers have been ready since 3rd of January), "Old Subscriber," "A Grateful Lady" (has made us her debtor), "W. G." "J. C." "F. D. W." "R. J. G." (license is not necessary), "T. W." (misunderstands our remark), "R. R." "Dr. H." "L. R." Notices of various books stand over.

"*Books and Addresses.*"—We have not time to point out books or find addresses.

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor:" all other communications should be addressed to the EDITOR, and *not* to the Publisher.

ADVERTISEMENTS.

ROYAL ACADEMY of ARTS, Trafalgar-square.—NOTICE TO ARTISTS.—All works of Painting, Sculpture, or Architecture intended for the ensuing EXHIBITION at the ROYAL ACADEMY must be sent in on MONDAY, the 5th, or TUESDAY, the 6th of April next, after which time no work can possibly be received, nor can any works be received which have already been publicly exhibited. The other regulations necessary to be observed may be obtained at the Royal Academy.

JOHN PRESCOTT KNIGHT, R.A. Secretary.

Every possible care will be taken of works sent for exhibition; but the Royal Academy will not hold itself accountable in any case of injury or loss; nor can it undertake to pay the carriage of any package which may be forwarded by carriers. The prices of works to be disposed of may be communicated to the Secretary.

ARCHITECTS desirous of sending in competition Designs (on or before the 9th April next) for the Erection of a CHURCH, PARSONAGE, and SCHOOLS, and TEACHERS' RESIDENCE, in the Parish of Portsea, Hants, may receive a Lithographed Copy of the Site, and a statement of Particulars as under.

C. H. BINSTEED,
H. FORD, } Hon. Secretaries.

16, High street, Portsmouth, Feb. 9th, 1852.

MEMORIAL WINDOW.—TO GLASS STAINERS.—It having been determined to fill the Great West Window of the Parish Church of Doncaster with Stained Glass, in memory of the late Sir William Bryan Cooke, baronet, of Wheatley, the Committee are ready to receive DESIGNS and TENDERS for the same.—Further particulars may be known on application to JOHN LISTER, Esq. Hon. Secretary to the committee.—Doncaster, February 17, 1852.

TO RAILWAY CONTRACTORS.

DUBLIN and DROGHEDA RAILWAY.

CONTRACT FOR WORKS.—Kell's Extension, 9¼ miles. Tracings of the drawings, copy of specification, and detailed bills of quantities, for the above works (the tenders for which are to be delivered on or before the 20th March), may be had upon application to Mr. KELLY, Architect and C.E. 45, Upper Gloucester-street, Dublin.

TO GAS COMPANIES, GAS ENGINEERS, &c.

A QUANTITY of STOURBRIDGE CLAY GAS RETORTS, manufactured by Hickman and Co. and in good condition, are now TO BE SOLD very cheap; they comprise—

52 pieces (each 4 feet 6 inches long), making 13 perfect retorts 18 feet long; oval, inside dimensions 22 by 13;
28 pieces (each 4 feet 6 inches long), making 7 perfect retorts 18 feet long; round, inside diameter, 15 inches;
and several additional lengths.

They may be seen at Charlton-wharf, near the steam-boat pier, Woolwich, by application to Mr. PRICE, Wharfinger.

February 1852.

FRUIT TREES, SEED BEDS, &c.—NEW TWINE NETTING, to protect the bloom of peach, nectarine, apricot, and other trees; flower and seed beds from frost, blight, and birds; or as a fence against fowls, cats, &c. at ONE HUNDRED PER CENT. CHEAPER THAN AT ANY OTHER MANUFACTORY! New twine netting, one yard wide, 1½d. per yard; two yards wide, 3d. per yard; Worsted netting, two yards wide, 4d. per yard; half-inch mesh ditto, two yards wide, 5d. per yard. Sheep-folding net, of superior quality, four feet high, 4d. per yard. The repaired tanned fishing netting, two or three yards wide, 1½d. per yard; four or six yards wide, 3d. per yard.—exactly the same as advertised by others at double the above prices. Nets made to order. Casting nets, 1s. per yard round complete. Drag nets for ponds, lakes, and rivers, with purse complete, twelve yards long, 1*l.*; twenty yards long, 2*l.*

The trade supplied at W. CULLINGFORD'S, 1, Strathmore-terrace, Shadwell. Orders by post punctually attended to.

THE ARCHITECTURAL EXHIBITION (with the collection of Materials, Patents, Processes, &c., connected with Architecture), IS NOW OPEN from Ten till dusk, at the Portland Galleries, opposite the Polytechnic Institution, Regent-street. Admission One Shilling, including Catalogue. Season Tickets, including a Catalogue, admitting the holder from the 10th of January to the 18th of March, Two Shillings. Free Tickets may be had for Workmen, on application at the Galleries.

JAS. EDMESTON, Jun. } Hon. Secs.
JAS. FERGUSSON, F.R.A.S.

NATIONAL DEFENCES.—ROYAL POLYTECHNIC INSTITUTION.—An Explanatory Description, by Mr. Crispe, of the Prussian Musket, the Lancaster and Minie Rifles, the various Revolvers, and other Fire-arms, with the improved Conical Bullet, daily at a Quarter to Three o'clock, and at Half-past Eight in the Evening.—"A Musical Cento," being a Lecture on the Songs of Dibdin and other eminent composers, by T. Thorpe Peed, esq. Professor of Singing at the Royal Academy of Music, on Monday, Tuesday, and Thursday Evenings, at a Quarter to Eight.—Lecture on Astronomy, by Dr. Bachhoffner, on Wednesday and Friday Evenings, at a Quarter to Eight o'clock.—Lectures on Chemistry, by J. H. Pepper, esq.—Dissolving Views, &c.—Admission, 1s.; Schools and Children under ten years of age, half-price. A New Edition of the Catalogue.

SUBURBAN ARTISAN SCHOOLS OF DRAWING AND MODELLING.

Founded May 1, 1850.

Patron—H. R. H. PRINCE ALBERT.

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T. Thornycroft, esq.
M. D. Wyatt, esq.

Treasurer—The Hon. W. Ashley.

Bankers—Commercial Bank of London, Covent-garden.

As the first of the above institutions, the North London School, at Camden-town, has met with unequivocal success, the Committee in pursuance of their original plans have decided upon the foundation of similar establishments in the undermentioned districts, viz.:—

A North-Eastern School, at Islington.
A North-Western School, at Paddington.
A West London School, at Knightsbridge.
A South London School at Lambeth.

The classes in these schools will be open for artistic and geometric drawing every evening at a charge of 2*s.* per month.

Any communication in furtherance of the above may be addressed to the honorary secretary.

J. NEVILLE WARREN, Hon. Sec.
50, King William-street, City.

February 1852.

EVENING ARCHITECTURAL, ORNAMENTAL, and PERSPECTIVE DRAWING-CLASSES, conducted by THOMAS J. HILL, Offices, 12, Helmet-row, Old-street. Hours, Seven till Ten, Saturdays excepted. The whole of the valuable and rare collection of models and drawings of the late C. Davy are at the use of the Students. Terms moderate.

GREAVES'S BLUE LIAS LIME.—The superior manner in which the above is ground renders it cheaper for concrete or stucco than any other lime or cement. The shell lime for mortar is burnt on an improved principle, leaving scarcely any core. The satisfaction constantly expressed by Engineers, Architects, and Contractors, of the above, is its best recommendation.

Gibbs, Canning, and Co.'s Blue Vitrified Bricks, Pipes, Junctions, Bends, and Fire Goods.

ROMAN, PORTLAND, PARIAN, ANSTON, and LIAS CEMENTS of the best quality.

SECONDS, PAVIORS', STOCKS, and other Bricks.

CHARLES RICHARDSON, 6 South Wharf, Paddington.

GREY-STONE LIME.—HALL, Brothers, Merstham Lime Works, near Reigate, beg to offer to Builders and others a list of their prices for Cash on delivery.

Grey-Stone Lime	6*s.* 0*d.* per Yard, or 22 Bushels.	
Ditto, for Manure	4*s.* 0*d.*	ditto
Ditto, Ashes	1*s.* 6*d.*	ditto
Black ditto	2*s.* 0*d.*	ditto

In not less than Six Yard quantities, and put on the Railway for all goods stations on the London and Brighton, and South-Eastern Railways, or lines connected with them. A fresh supply hot from the kilns daily, at the Bricklayers' Arms and Croydon Stations, and delivered to all parts.

Prices for Cash on delivery:—7*s.* per yard at the stations or works; 8*s.* per yard delivered within five miles; in not less than 2-yard quantities. Booking, 2*s.* per yard; 1*s.* per yard off, if paid monthly. Collecting charged for. The Quality is guaranteed to be the Best.—Address, Merstham, near Reigate, Croydon; or Youl's place, Old Kent-road.

JORDAN'S PATENT MACHINE-CARVING and CHURCH-JOINERY WORKS, Belvedere-road, Lambeth.—The Proprietors of the above Works beg to return their best thanks to the Nobility, Architects, Builders, and the Public generally for the very liberal support they have received, and to assure them it will be their constant endeavour to deserve

In addition to the general machinery and carving business, they undertake Contracts to execute and fix every description of Joinery-work required in the fitting-up of Churches and Chapels, viz.:—carv d and moulded bench seatings, screens, pulpits, reading-desks, lecterns, sedilias, alter-rails, doors, tracery-fronts, reredos, altar-tables, chairs, faldstools, organ-cases, moulded and carved cornices; together with tracery and moulded framings required in halls and the construction of elaborate staircases, chimney-pieces, floors, &c.

The Proprietors respectfully call the attention of Architects and all persons engaged in buildings to their new application of machinery to the inlaying of wainscot floors, doors, dados, hall and dining-room panelling, cornices, &c. specimens of which are being prepared for Dudley House, and can be seen at the works; as also every description of carved work and mouldings required in the building trade.—For prices and estimates apply to the manager upon the premises.

N.B. A richly-carved oak screen, which obtained the prize medal at the Great Exhibition, for sale.

FIRE-PROOF CONSTRUCTION.—FOX and BARRETT'S PATENT.—The great importance of fire-proof construction is shown by the recently published returns of fires in London during the past year, by which it appears that there is a considerable increase as compared with former years, the number actually exceeding 1,000, or an average of three per day.

This result affords strong corroboration of a fact stated upon high authority, THAT NO BUILDING IN WHICH TIMBER JOISTS ARE USED IS PRACTICALLY SECURE FROM THE DANGER OF FIRE; and when to this fact it is added that timber is also liable to dry-rot and the ravages of insects and vermin, for which it affords a ready harbour, the mischief arising from its extensive use will be sufficiently apparent.

It becomes, then, worth the attention of those who are interested in building, to inquire whether materials of an imperishable nature cannot be substituted for timber in the construction of floors, &c., without involving additional cost; and attention is invited to a number of buildings of all classes, either finished or in course of erection, upon the above improved system, in which joists, either of rolled or cast-iron, are substituted for timber, together with a solid superstructure of concrete, adapted to receive a finished surface of floor or roof of any kind.

Among the buildings at present in progress in London on this system is the new GUY'S HOSPITAL, an extensive range providing accommodation for 300 additional beds; and for buildings of this description and magnitude, as well as for PRIVATE DWELLING-HOUSES, OFFICES, WAREHOUSES, &c. it possesses very great advantages.

A detailed description of the system, estimates, and all further information, may be obtained on application to the Proprietor of the patent,

Mr. BARRETT (late Fox and BARRETT),
12, York-buildings, Adelphi,

whose offices form part of a building erected on this principle, and where specimens of the rolled iron joists may be seen.

BUILDERS' BENEVOLENT INSTITUTION.—An ELECTION of THREE PENSIONERS, Two Males and One Female, will take place on Thursday, 27th May next, at the London Tavern, Bishopsgate-street. Candidates may obtain Forms of Application, to be returned on or before the 13th March, by applying to the Secretary, at the Office, 476, New Oxford-street. Pensions, 34*l.* per annum for Males, and 20*l.* for Females.

A. G. HARRIS, Secretary.

PROVIDENT INSTITUTION of BUILDERS' FOREMEN.—Notice is hereby given, that the late Special General Meeting of the Members of this Institution held at the Bay Tree Tavern, St. Swithin's-lane, on Wednesday Evening, February 18th, is ADJOURNED until WEDNESDAY EVENING NEXT, March 3, when the attendance of members is respectfully requested, to transact business of considerable importance.

W. ALLARD, Secretary.

PROVIDENT INSTITUTION of BUILDERS' FOREMEN. Established for the relief of its Decayed Members, Widows, and Orphans.

G. BAKER, Esq. Governor.

PATRONS

The Right Hon. Earl of Carlisle.
The Right Hon. Earl of Ducie.
The Right Hon. Earl of Ellesmere.

S. Angell, esq.	H. E. Kendall, esq. F.S.A.
G. Baker, esq.	J. Kelk, esq.
Thos. Cubitt, esq.	J. Locke, esq. M.P. C.E. F.R.S.
William Cubitt, esq. Ald. M.P.	H. Lee, esq.
J. Chadwick, esq.	H. Lee jun. esq.
C. R. Cockerell, esq. R.A. F.R.S.	J. Lee, esq.
J. W. Donthorn, esq.	W. Lee, esq.
T. L. Donaldson, esq.	J. Mowlem, esq.
G. Godwin, esq. F.R.S.	W. Nixon, esq.
S. Grimaldi, esq. F.S.A.	T. Piper, esq.
T. Grissell, esq. F.S.A.	W. Piper, esq.
H. P. Hope, esq. M.P.	S. M. Peto, esq. M.P.
W. Harrison, esq. (F.S.A.	G. Rennie, esq. C.E. F.R.S.
P. Hardwick, esq. R.A. F.R.S.	Baron DeRothschild, M.P.
Thos. Hutchins, esq.	W. Tite, esq. F.R.S. F.S.A.

The FIFTH ANNIVERSARY DINNER will take place at the London Tavern, on Wednesday, March 24, 1852.

T. PIPER, Esq. in the Chair.

HONORARY STEWARDS.

A. N. Armani, esq.	J. Husler, esq.	T. Nye, esq.
J. M. Blashfield, esq.	T. Jackson, esq.	T. Peake, esq.
R. P. Browne, esq.	J. Jay, esq.	M. Pass, esq.
G. Briand, esq.	W. Jeakes, esq.	H. Richardson, esq.
V. Bellman, esq.	R. W. Kennard, esq.	T. Stirling, esq.
R. L. Curtis, esq.	G. Lock, esq.	R. Stevens, esq.
E. Carter, esq.	S. Lee, esq.	J. Taylor, esq.
H. Christ, esq.	C. Lacey, esq.	S. Trickett, esq.
H. M. Cooper, esq.	J. Little, esq.	J. Tillett, esq.
J. Clarke, esq.	G. McLennan, esq.	H. Tregon, esq.
J. Dale, esq.	W. Mosley, esq.	W. Tuckwell, esq.
W. W. Dennis, esq.	A. Mason, esq.	J. Walker, esq. C.E.
G. H. Ellis, esq.	T. Magnus, esq.	S. Watkins, esq.
J. Gibbs, esq.	G. Myers, esq.	W. Webb, esq.
P. C. Hardwick, esq.	T. Nesham, esq.	E. Wallis, esq.
H. C. Holland, esq.	W. Norris, esq.	T. Wallis, esq.

Tickets to be had at the London Tavern; also at the Bay Tree Tavern, City.

W. ALLARD, Secretary.

Bay Tree Tavern, St. Swithin's-lane, Feb. 19, 1852.

TO DRAUGHTSMEN AND CIVIL ENGINEERS.

H. MORRELL, BLACK LEAD PENCIL MANUFACTURER, No. 149, Fleet-street, London.

These Pencils are prepared in various degrees of hardness and shades.

H H H H for drawing on wood.	F F light and shading.
H H H for architectural use.	F for general use.
H H for engineering.	B black for shading.
H for sketching.	B B ditto ditto.
H B hard and black for drawing.	B B B ditto ditto.
	B B B B ditto ditto.

M medium.

Sold by all the principal Stationers in town or country.

TO ARCHITECTS.

COMPETITION and other DRAWINGS.—Mr. THOMAS S. BOYS, Member of the New Society of Painters in Water Colours, and author of "The Picturesque Architecture of Paris, Ghent, Rouen, &c." and of "London as it is," offers his services in Tinting Backgrounds, Landscapes, Perspective Views, Interiors, &c. From the long experience he has had in such subjects, he is fully aware of the points essentially necessary to be attended to. Drawings and designs lithographed in a superior manner.—Address, Mr. BOYS, 18, Albany-street, Regent's-park.

DECORATIVE PAINTING.—Mr. FREDERICK SANG, from the Royal Academy of Munich, DECORATIVE ARTIST in FRESCO, and in all other manners of Painting; whose works may be seen in the principal public buildings of the metropolis, begs to inform his patrons and Architects in particular, that he has considerably increased his Establishment, and is now enabled to undertake, on the shortest notice, the embellishment of private and public buildings, in any part of the United Kingdom, on the most reasonable terms, and in any of the Classical, Mediæval, or Modern Styles.—Apply to F. SANG, Decorative Artist, 38, Pall-mall, London.

ARCHITECTURAL DESIGNS COLOURED for COMPETITION and EXHIBITION by GEORGE CHILDS, 12, Amwell-street, Pentonville. Designs Lithographed.

TO INVENTORS, PATENTEES, PATENT AGENTS, and OTHERS.—Drawings made, copied, or traced, with rapidity and accuracy, on moderate Terms, by a Draughtsman of extensive experience, who has long evenings disengaged.—Address R. W. 84, Commercial-road, Lambeth.

QUANTITIES, SPECIFICATIONS, SCHEDULES of PRICES, WORKING DRAWINGS, &c. copied, lithographed, or printed.

PLANS, ELEVATIONS, DRAWINGS of MACHINERY, &c. lithographed or engraved.

BUILDERS' and CONTRACTORS' ACCOUNT-BOOKS; DRAWING PAPERS; ditto, mounted and continuous. TRACING PAPER and CLOTH; ditto in lengths. GENERAL STATIONERY, for the use of BUILDERS, ARCHITECTS, SURVEYORS, and ENGINEERS, at the lowest current rates.

WATERLOW and SONS, 65 to 68, London-wall; and 49, Parliament street, London.

Contracts for the supply of large establishments.

BILLS of QUANTITIES.—DAY & SON, Lithographers to the Queen.—Lithograph Bills of Quantities with the greatest despatch, and at a vast saving on the prices generally charged.

Perspectives got up from Geometrical Drawings, either in Outline or Water Colours.

17, GATE-STREET, LINCOLN'S-INN-FIELDS.

MARTIN and HOOD, Architectural, Mechanical, Engineering, Map, and Plan Draughtsmen, Plain and Ornamental Writers, Engravers, and General Lithographers, respectfully intimate to their patrons and the public, that they are prepared to undertake WORKS OF ANY MAGNITUDE, in the above branches, on the most reasonable terms.

WORKING and TINTED DRAWINGS of every description of MACHINERY.

8, GREAT NEWPORT-STREET, LEICESTER-SQUARE.

SCOTTISH EQUITABLE LIFE ASSURANCE SOCIETY.

Incorporated by Special Act of Parliament.

TO SECURE THE ADVANTAGE OF THIS YEAR'S ENTRY, PROPOSALS MUST BE LODGED AT THE HEAD OFFICE, OR AT ANY OF THE SOCIETY'S AGENCIES, ON OR BEFORE FIRST MARCH.

61, Moorgate-street, London, 9th February, 1852.

ROB. CHRISTIE, Manager.
W. COOK, Agent.

CLARK AND CO. 31, CHANCERY-LANE,

AND TUNNEL IRON WORKS, WAPPING, LONDON, ENGINEERS AND MANUFACTURERS OF

PATENT CONVEX REVOLVING IRON SHUTTERS, AND PATENT REVOLVING WOOD SHUTTERS.

The CONVEX IRON SHUTTER is twelve times stronger, rolls in less space, works easier, less liable to get out of repair, has a better appearance, and is cheaper than any other description of iron shutter. CLARK'S PATENT REVOLVING WOOD SHUTTERS have metal hinges, substantial metal gearing, and are less expensive than any other shutter extant.

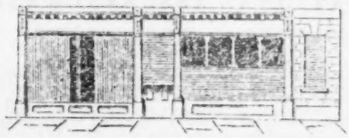
"MESSRS. CLARK,

"Gentlemen,—In answer to your request, I have great pleasure in adding my most unqualified testimony to the efficacy of the Iron Revolving Shutters erected by you at my shop four years ago, which, under the circumstances, afford a strong proof of their superiority over others; the glass being the largest in London, the shutter is without support, other than its extreme edges (there being no centre sash-bar), yet from their extreme rigidity the necessary protection is obtained, and which, from my experience, I can confidently assert would not have been ensured by any other shutter extant.

"Yours respectfully,

"GEO. DONNE.

"155, Leadenhall-street, Jan. 1, 1852."



"23 and 24, St. George's-place, Hyde Park-corner, Sept. 26, 1851.

"SIRS,—Having occasion for some large shutters for several shop fronts at Knightsbridge, we took considerable pains to ascertain which principle was the best, and are glad to say we decided on yours; and now having had them in use for some years, we can most confidently, and with great pleasure, recommend them, particularly for their great strength and rolling up in small space, and intend applying them to other houses in course of erection.

"We must also add our satisfaction at your punctuality in executing our orders. "We are, Sirs, your most obedient servants,

"Messrs. CLARK and Co. Wapping." "ROGERS and DEAR.

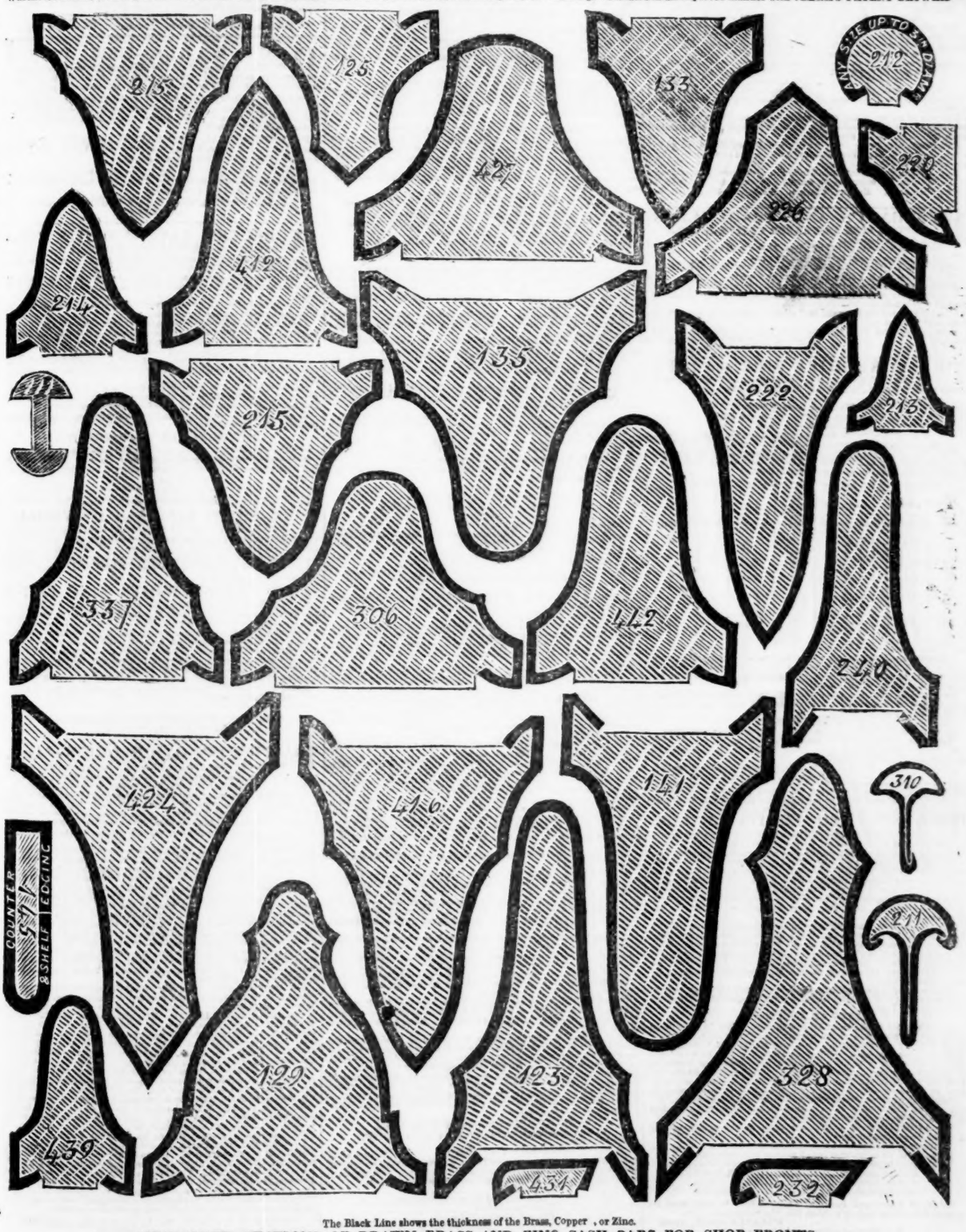
(Numerous other testimonials will be forwarded on application.)

Revolving Shutters can be applied above, below, or at either side of window.

IMPROVED DRAWN BRASS AND ZINC SASH BARS, STALL-BOARD PLATES, AND MOULDINGS,

FOR SHOP FRONTS, SASHES, SKYLIGHTS, CONSERVATORIES, &c.

Engraving in the first style of workmanship. Sun Blinds, Metal Entablatures, and Pilasters for Shop Fronts. Spiral Iron Staircases, Hot-water Apparatus, Fire-proof Safes and Doors, Wharf and Warehouse Cranes, Hoisting Machines, Sawing and Moulding Machinery of every description, Steam Engines, &c. Buildings Ventilated in an improved manner with CLARK'S PATENT BLOWER.



The Black Line shows the thickness of the Brass, Copper , or Zinc.

FULL-SIZED SECTIONS OF DRAWN BRASS AND ZINC SASH BARS FOR SHOP FRONTS,

Selected from CLARK and CO.'S numerous Patterns, drawn on wainscot cores 32 feet long in one piece. Half Bars and Angle Bars in proportion can be had in cast Iron, same patterns.

SASH-BARS MADE TO ARCHITECTS' OWN DESIGNS WITHOUT EXTRA CHARGE.

ARCHITECTURE, CIVIL ENGINEERING, SURVEYING, &c.—Offices, No. 30, Southampton-buildings, Staple-inn, Holborn. Established above forty years. Mr. GRAYSON begs to inform those gentlemen who are interested in the above sciences, that he continues to GIVE INSTRUCTION to morning and evening classes, where, besides architecture, &c., ornamental, perspective, and landscape drawing, with access to an extensive and valuable collection of models and works on the fine arts.—Mr. GRAYSON in attendance from 9 a.m. to 2 p.m., and from 6 to 9 p.m.

PROVISION FOR FAMILIES IN CASE OF DEATH; ENDOWMENTS FOR CHURCHES, CONVENTS, AND SCHOOLS, BY MEANS OF ASSURANCE.

THE CATHOLIC LAW and GENERAL LIFE ASSURANCE COMPANY, 8, New Coventry-street, Leicester-square, London; 15, Bachelor's-walk, Dublin; and 18, Rue Tronchet, Paris. Incorporated under 7 & 8 Vict. c. 110.

CAPITAL 500,000*l*.

This Company assures diseased as well as healthy lives for sums of from 5*l*. to 5,000*l*.

The annual income is nearly 4,000*l*.

Lives declined by other offices accepted at equitable rates.

Prospectuses, proposals, and every information furnished on application to the Actuary or Secretary.

M. FORRISTALL, Managing Director.

LIFE ASSURANCE for the WORKING-CLASSES.

BRANCH OFFICE—3, EXETER 'CHANGE, WELLINGTON-STREET NORTH (opposite Waterloo-bridge), STRAND.

Open every Evening from Six till Eight o'clock.

Subscription for securing payments of 5*l*. and up to 50*l*. payable on death of subscriber, may be made upon the following terms, certified by the Actuary of the Company, W. H. Archer, Esq.:—

Weekly Contributions for payment of 5*l*. at death.

Healthy persons whose age on becoming subscribers shall be—

From 10 to 25 years, to pay One Penny per Week.
" 35 to 45 " " Twopence "
" 45 to 55 " " Threepence "

Collectors call at the houses of Subscribers for these weekly subscriptions.

The rate of subscription will not increase as the contributor grows older, but the same weekly amount paid at the commencement will be continued throughout life.

Subscribers may make from one to ten subscriptions, so as to secure the sum of Five, Ten, Fifteen, Twenty, and so on up to Fifty Pounds.

N.B. No communications relative to the assurance of sums from 5*l*. to 50*l*. can be attended to unless addressed to Mr. JOHN MOLYNEUX, 2, Exeter 'Change, Wellington-street North, Strand.

MERCHANT'S AND TRADESMAN'S MUTUAL LIFE ASSURANCE OFFICE, 5, Chatham-place, Blackfriars, London.

JOHN MACGREGOR, Esq. M.P. Chairman.

The Advantages offered by this Society are—

POLICIES INDISPUTABLE, unless obtained by fraud.
All the MEDICAL FEES PAID by the Society.
Policies payable during the lifetime of the Assured.
Non-forfeiture of Policies through non-payment of premiums may be prevented.
LOANS granted on Personal and other Securities in connection with Life Assurance.

Prospectuses and every information may be obtained at the Office.

GEORGE THOMSON, Manager.
THOS. MUSGRAVE, Secretary.

THE YORKSHIRE FIRE and LIFE INSURANCE COMPANY. Established at York, 1824, and empowered by Act of Parliament. Capital, 500,000*l*.

TRUSTEES.

Lord Wenlock, Escrick Park.
G. L. Thompson, esq. Sheriff Hutton Park.
Robt. Swann, esq. York.

BANKERS.—Messrs. Swann, Clough, and Co. York.
ACTUARY and SECRETARY.—Mr. W. L. Newman, York.

The attention of the public is particularly called to the terms of this Company for LIFE INSURANCES, and to the distinction which is made between male and female lives.

Extract from the Table of Premiums for Insuring 100*l*.

Age next birthday.	A MALE.	A FEMALE.	Age next birthday.	A MALE.	A FEMALE.
	Whole Life Premiums			Whole Life Premiums.	
	£ s. d.	£ s. d.		£ s. d.	£ s. d.
10	1 7 6	1 5 4	46	3 11 6	3 3 2
13	1 9 3	1 7 0	50	4 1 9	3 13 3
15	1 11 2	1 8 10	53	4 11 8	4 3 6
20	1 14 4	1 11 6	58	5 4 0	4 14 0
23	1 17 0	1 13 8	60	6 6 0	5 12 6
26	2 0 3	1 16 2	63	7 4 0	6 9 6
*30	2 5 0	1 19 9	66	8 4 0	7 10 8
33	2 8 6	2 2 10	70	10 0 4	9 7 6
36	2 13 0	2 6 4	73	11 16 2	11 2 6
40	2 19 9	2 12 0	76		13 1 9
43	3 5 3	2 17 2	80		15 12 10

* EXAMPLE.—A gentleman whose age does not exceed 30, may insure 1,000*l*. payable on his decease, for an annual payment of 22*l*. 10*s*.; and a lady of the same age can secure the same sum, for an annual payment of 19*l*. 17*s*. 6*d*.

Prospectuses, with the rates of premium for the intermediate ages, and every information, may be had at the Head Office in York, or of any of the Agents.

FIRE INSURANCES

are also effected by this Company, on the most moderate terms.

Agents are wanted in those towns where no appointments have been made. Applications to be made to Mr. W. L. NEWMAN, Actuary and Secretary, York; or to

Mr. RICH. WOOD, Solicitor, 12, John street, Bedford-row, Agent for London.

SPECIAL NOTICE.—To secure the advantage of this YEAR'S ENTRY, Proposals must be lodged at the Head Office, or at any of the Society's Agencies, ON OR BEFORE 1st MARCH.

THE SCOTTISH EQUITABLE LIFE ASSURANCE SOCIETY (Incorporated by Special Act of Parliament), is an institution peculiarly adapted to afford provisions for families. It is a purely Mutual Assurance Society. The whole profits are allocated every three years amongst policies of more than FIVE YEARS' duration. No part is, as in the case of a proprietary company, diverted from those who are assured and paid away to shareholders. The additions which have already been made to policies afford the clearest evidence of the prosperity of the Institution, and the great advantages derived by its members.

Since the Society was instituted in 1831, the additions to policies have been at the rate of two pounds per cent. per annum, not only on the sums assured, but also on all the additions accumulated from time to time, so that the bonus of two pounds per cent. declared at 1st March, 1850, was equal to about two pounds fourteen shillings per cent. per annum on the sums originally assured by the earlier policies.

The total additions to policies made at the preceding 1st March, 1850, amounted to Four Hundred and Fifty Thousand Six Hundred and Sixty-five Pounds.

EFFECT OF ADDITIONS.

On a policy for 1,000*l*., dated 1st March, 1833, 1,482*l*. 7*s*. 8*d*. will be payable if it become a claim during the current year, after payment of this year's premium. This is an addition of nearly 48 per cent. on the sum assured. Supposing such a policy to have been effected at the age of 30, the additions, if now applied in reduction of the future premium, would reduce the premium from 22*l*. 10*s*. 10*d*. to 3*l*. 15*s*. 8*d*., being 17*s*. 6*d*., or seven-eighths of a pound, per cent. only on the sum assured; and even this small payment must be reduced every three years during the subsistence of the policy, and may not only ultimately be extinguished, but leave further additions to be afterwards made to the policy.

The ADDITIONS or BONUSES may, in the option of the Assured, be applied thus:—

1. They may be added to the sum payable at death;
2. They may be commuted into a present payment; or,
3. They may be applied in reduction of the future premiums.

Amount assured	£3,000,000
Annual Revenue	130,000
Accumulated Fund	636,000

Tables of Rates and Form of Proposal may be had (free) on application at the Society's office, 61*a*, Moorgate-street, City.

WILLIAM COOK, Agent.

*** Medical referees paid by the Society.

LOANS.—Persons desirous of obtaining ADVANCES from 50*l*. to 250*l*. upon approved personal security, repayable by easy instalments, extending over a length-ened period, are invited to examine the principles of the BRITISH MUTUAL SUBSCRIPTION LOAN ASSURANCE CLASSES. Prospectuses, reports, and every information may be obtained on application at the British Mutual Life Office, 17, New Bridge-street, Blackfriars. Rules 6*d*. each copy, or 1*s*. per post. Note.—Four new classes are now in course of formation for London, and will immediately commence operations.

NATIONAL ASSURANCE AND INVESTMENT ASSOCIATION,

7, ST. MARTIN'S-PLACE, TRAFALGAR-SQUARE, LONDON;
AND 56, PALL-MALL, MANCHESTER.

Established May, 1844.

INVESTMENT OF CAPITAL AND SAVINGS.

The object of the Investment Department of this Institution, is to open equally secure and profitable channels of investment for the surplus capital of the affluent, and the provident savings of the industrial classes of the community. To persons desirous of placing their money out at interest, but unused to seeking securities, and inexperienced in estimating their value, this Institution offers immediate facilities, and an opportunity of realising the highest rate of interest yielded by first-class securities, in which alone the money deposited with the Association is employed.

Interest payable in January and July.

NATIONAL ASSURANCE AND INVESTMENT ASSOCIATION.

CAPITAL STOCK, £100,000.

The Capital Stock is altogether distinct and separate from the Depositors' Stock in the Investment Department of this Institution. It constitutes, with the Premium Fund, a guarantee for the engagements of the Association, and has been provided in order to render the security of the Assured complete.

IMPORTANT NOTICE TO POLICY-HOLDERS.

Policies absolutely INDISPUTABLE; and made PAYABLE TO THE HOLDER, BY SPECIAL ENDORSEMENT, thus saving the expense of a transfer deed as well as legacy and probate duty.

FOR SECURING LOANS OR DEBTS.

Amongst the varied and extensive Tables of this Institution will be found one peculiarly advantageous where Policies are required for securing loans or debts. The rate of Premium by this Table will protect the Interest of the Policy-holder from all contingencies, and allow the Life assured to proceed to, and reside in, any part of the world.

MUTUAL ASSURANCE:—

Assurances may be effected from 50*l*. to 10,000*l*. on a Single Life.
Entire profits belong to the Assured, and divided annually.
Credit for half the amount of the first five annual Premiums.
Medical men remunerated for their Reports.
Liberty to Travel, and Foreign residence, greatly extended.

COLLEGE EDUCATION.

A Novel Table has been constructed expressly for the use of this Institution, whereby a Parent, by the payment of a very small annual premium, may, in the event of death, secure to a Child, either an Annuity, payable from the age of 17 to 23, or an equivalent amount in money.

Other new and important Tables for Educational purposes, and Endowments for Children, are in course of construction, and will shortly be published.

The Tables for Reversionary and Deferred Annuities, are particularly deserving of attention, whether regarded as a means of providing for a particular Individual, or as a resource against the casualties of age, involving, as it does, the uncertainties of health and fortune.

Full information and prospectuses may be obtained, on application at the Head Offices of the Association, or to the respective Agents, throughout the United Kingdom.

PETER MORRISON, Managing Director.

Applications for Agencies may be made to the Managing Director.

THE TY-MAWR SLATE COMPANY, Llanllyfni, Carnarvon.—Upon the cost-book system.—Divided into 3,000 parts or shares of 5*l*. each.—Office of the Company, 32, Moorgate-street.

TRUSTEES.

William Lucas Hanley, e q. Highbury.
Alexander Maclean, esq. Harrow-on-the-Hill.

DIRECTORS.

Alexander Maclean, esq.
J. Burress Watson, esq. Manchester-street, Manchester-square.
John Todd, esq. Cheyne-row, Chelsea.
J. C. Gun, esq. Mem. Inst. C.E. Edinburgh.
Horace Green, esq. 145, Upper Thames-street.

SOLICITORS.—Messrs. Vardy and Delmar, 7, Finsbury-square.

BANKERS.—Commercial Bank, Lothbury.

PURSER and SECRETARY.—Mr. James Bacon.

This Company is formed for the purpose of working the Ty-Mawr Slate and Slab Quarry, situate in Nantlle Vale in the Parish of Llanllyfni, near Carnarvon.

The demand for slate and slate slab increases so rapidly, and such enormous supplies are annually shipped to America and elsewhere, that few investments of the present day afford greater advantages for the lucrative employment of capital than the object proposed.

The quarry embraces an area of about 75 acres, having 490 yards on the course of the vein, which exceeds 60 feet in width, and yields two kinds of slate, the light blue and the purple red. The slate is of first-class quality, being very light, strong, and of even cleavage; smooth on both sides, and free from spots or stripe, finely laminated, full of metal, and will bear an edgeway pressure with a greater deflection than almost any other kind of slate.

A considerable sum of money has already been expended in opening the quarry, making tramways and in machinery, of all which the Company will have the benefit.

The quarry is sufficiently cleared to enable three hundred men to commence working immediately, and is admirably situated for being worked with economy, the works having been so judiciously laid out, that ample space is provided for the refuse heaps on either side of the vein, leaving all the available rock unobstructed; and, moreover, an abundant supply of water is obtained from the adjacent mountains, sufficient to work every description of machinery required in the quarry, thereby dispensing with the use of steam power, which is calculated to be a saving of at least 400*l*. per annum.

The whole of the plant and buildings are included in the purchase of the quarry.

At present the produce is conveyed to the port of Carnarvon, by means of the Nantlle Vale Tramway, which runs within half a mile of the quarry, at a cost of 3*s*. per ton, but this cost will very soon be reduced to less than one-half, by means of the Bangor and Port Madoc Railway, now in the course of construction, and which will be completed as far as Carnarvon during the ensuing spring.

A most valuable appendage is attached to the quarry at Carnarvon, viz. a wharf and quay, free of any charge or dues; vessels of 150 tons burthen can lie alongside and load, and convenience are attached for stowing away a large stock of slates; it is considered that a saving of 200*l*. a year is effected by this privilege.

The property is held direct from the freeholder, at the very moderate royalty of 2*s*. 6*d*. per ton.

The amount of capital required for the purchase of the Property, Works, Machinery, Plant, &c. is 11,000*l*. and 4,000*l*. is proposed to be expended in enlarging the Works and increasing the capabilities of the quarry.

From estimates prepared upon the practical working of the quarry, a profit is shown, after allowing for every expense, of 20*l*. per cent. which returned twice a-year (as is usual with slate works), gives an annual profit of 40*l*. per cent. available for dividends.

The estimates and plans, and also specimens of the Slate may be inspected by Shareholders at the Office of the Company, where applications for Shares in the following Form may be made, as also, at the Office of the Solicitors, Messrs. VARDY and DELMAR, 7, Finsbury-square, London.

FORM OF APPLICATION FOR SHARES.

TO THE DIRECTORS OF THE TY-MAWR SLATE COMPANY.

GENTLEMEN,

I hereby request that you will allot me Shares, of 5*l*. each in the above Company, and I hereby agree to accept and pay up the same, and sign the Cost Book of the Company, when required to do so.

I am, Gentlemen, your obedient servant,

Name, in full .....
Profession, Trade, or Occupation .....
Residence, in full .....
Place of Business (if any) .....
Name and Address of Referee .....
Date .....

LONDON and PROVINCIAL JOINT-STOCK LIFE ASSURANCE COMPANY.

Established, 1847.—Offices, 17, Gracechurch-street.

The Company effect every description of Life Insurance, both on the participating and non-participating scales.

They also lend money on the security of freehold and long lease-hold property, reversions absolute or contingent, life interests, and incomes legally assignable. And on personal security, accompanied by at least three unquestionable sureties, and a policy of insurance effected with the Company for not less than double the amount borrowed. In cases of personal security, the loan is made for periods of from one to five years, repayable by annual, half-yearly, or quarterly instalments, with interest at 5 per cent.

C. INGALL, Actuary and Secretary.

THE ROYAL BRITISH BANK, incorporated by Charter, besides transacting all ordinary Banking business,

Continues to ad. TALLOW,

ON DEPOSITS for six months, 3 per cent. per annum; and on sums for shorter periods and at Call—interest varying with the amount and time in Bank;

And GRANTS

CASH CREDITS for indefinite periods, on sufficient securities, at 1 per cent. commission half-yearly on the amount of the credit, and 5 per cent. per annum interest on the balance only at debit; and

LOANS for short periods on marketable securities, at rates varying with the circumstances.

Every additional information and forms for opening accounts, &c. will be supplied at the Bank and its Branches, or sent by post on application.—By Order of the Court of Directors,

HUGH INNES CAMERON,
16, Tokenhouse-yard, Lothbury, London. General Manager.

DAMP WALLS.—NEW PATENT PAINT, as applied on the Thames Tunnel, guaranteed effective and permanent inside or out, in quantities to finish 20 square yards for 10*s*., if 100 yards 30*s*., and no charge for packages.

PATENT LIQUID CEMENT for the fronts of houses, for beauty pre-eminent, giving the appearance of fine cut stone, and only one-eighth the cost of Oil Paint. In casks of 1, 2, and 3 cwt. at 8*s*., 14*s*., and 21*s*. each.

PATENT MINERAL ZINC PAINTS, invaluable for cheapness, beauty, and permanence, ready for use. White Stone and Lead, 28*s*. Greens and Blues, 6*s*. per gallon,

NEW PATENT COLOUR for inside work, may be applied on Wood, Stucco, Cement, or over Oil Paint. No smell, and will dry in an hour. In casks of 1 cwt. at 14*s*.

G. BELL and CO., Steam Mills, 2, Wellington-street, Goswell-street.

HUBBUCK'S PATENT WHITE ZINC PAINT.—The PERMANENT WHITE of the ancients, by its costliness hitherto restricted to the use of the artist, is now offered at the price of the ordinary white lead paint.

Four years since the proprietors placed their manufacture on a large scale, and put this elegant Paint in competition with White Lead.

Its confessed superiority over every other paint hitherto known brought forward various imitations.

These inferior productions, frequently made from zinc ores, containing lead, arsenic, and other deleterious material, alike injurious to health, deficient in body, and reducing the preservative properties for which the original paint stands pre-eminent.

In justice to the proprietors these should not be confounded with the original, even though sold under the pretence, that it is all the same.

HUBBUCK'S Paint is entirely free from any injurious properties whatever, it is healthful in the manufacture, healthful in use, and healthful to occupants of rooms newly painted with it.

As a guard to the painter against the substitution of the inferior paints, each cask is stamped

"HUBBUCK, LONDON, PATENT;"

and if the cask has not been so marked, the reason is obvious.

A Circular with full particulars may be had of THOMAS HUBBUCK and SON, Colour Manufacturers, opposite the London Docks.

THE TWO GREATEST IMPROVEMENTS IN BUILDINGS.

THE SHEET ZINC from the VIEILLE MONTAGNE COMPANY is already so well appreciated in Great Britain for its superior quality, cheapness, and great durability for roofing purposes, &c. that we need only mention, that during last year alone several thousand tons of zinc have been used for COVERING BUILDINGS, SHEATHING SHIPS, and other manufacturing purposes.

**THE PATENT WHITE ZINC PAINT was first brought under public notice in England a few years ago by the Patentees, the Vieille Montagne Zinc Mining Company. The superiority of this paint over white lead is now so incontestably established, that it will suffice to state that the Admiralty, and the most eminent professional men, have adopted it ever since its introduction in the market. When used in an unadulterated state, its chief advantages are, cheapness, brilliancy of colour, hardness, durability, untarnishable by foul air or gas, and not injurious to health.—For further particulars apply to Mr. H. F. SCHMOLL, General Agent to the Vieille Montagne Company, 19, Manchester-buildings, Westminster.

THE WASHINGTON CHEMICAL COMPANY,
NEWCASTLE-ON-TYNE;
Manufacturers of

PATTINSON'S OXICHLORIDE of Lead.

The Washington Chemical Company having, during the last year, established a Manufactory of Pattinson's Oxichloride of Lead on a large scale, and being able to supply it with regularity, and to execute orders without delay, now proceed to bring this new and valuable preparation of Lead before their friends and the public, quite sure that it will not, in the present age, be condemned because it is new, and that if judged by its merits, it must make its way, and finally take its place as one of the important manufactures of this country.

Pattinson's Oxichloride of Lead is a chemical combination of one equivalent of Chloride of Lead, and one equivalent of Oxide of Lead; it being well known that common White Lead is a chemical combination of one equivalent of Oxide of Lead, and one equivalent (or thereabouts) of Carbonic Acid, constituting what is called in chemical language, Carbonate of Lead. Now there is no reason to conclude that Carbonate of Lead is the only compound of lead valuable as a paint, and still less that it should be the best compound of lead for that purpose. In point of fact it is not so, for the newly-discovered Oxichloride in most, if not in all respects is far superior; its colour is brilliantly white, and in a number of cases it has been tried against the best White Lead that could be obtained, and after a period of upwards of two years it has been found to retain its white colour, considerably better than the lead against which it was tried.

But the chief and by far the most important advantage it possesses is, its remarkable and very decided superiority of Body; by which term the power of covering surface well and extensively, is understood among Painters. The attention of the discoverer was at a very early period drawn to this circumstance, and since that time, the Washington Chemical Company have had abundant opportunities of placing its superiority in this important particular beyond all doubt. They have themselves performed a number of experiments, and have also caused a number of experiments to be performed, in the large way, by various practical men, to ascertain accurately its covering power as compared with the best White Lead, and they now state the proportions to be as 60 to 100, that is, 60 lbs. of Oxichloride paint will cover as much surface as 100 lbs. of the best White Lead, the saving of cost being in the same proportion; besides this, the coating is thicker and more protective, both in and out of doors, as the Oxichloride dries into a hard, tenacious layer, more like an Enamel than Paint.

In using the Oxichloride, no difference in the materials with which it is mixed is required. Oil and Turpentine being employed as usual both for work technically called Flatting, and for work intended to be varnished. For the use of Paper Stainers and Leather Dressers, the Oxichloride is found to be peculiarly suitable. The Washington Chemical Company strongly recommend this newly discovered substance to the notice of consumers, both on account of its economy, and its intrinsic good qualities as a paint.

OFFICE IN LONDON.—Mr. R. COOKE, No. 7, Size-lane.
Office of the Washington Chemical Company,
73, Grey-street, Newcastle-on-Tyne, January 1, 1852.